

STIC-Biotech/ChemLib

99433

From: Elliott, George
Sent: Tuesday, July 22, 2003 3:57 PM
To: STIC-Biotech/ChemLib
Cc: Spector, Lorraine
Subject: FW: RUSH SEARCH request for Serial No. 09/546857

Importance: High

Please **rush**

Thanks,

George

10B11
10B19
RECEIVED
JUL 22 2003
(STIC)

-----Original Message-----

Fr m: Spector, Lorraine
Sent: Tuesday, July 22, 2003 3:51 PM
To: Elliott, George
Subject: RUSH SEARCH request for Serial No. 09/546857
Imp rtance: High

George,

Would you please authorize the following RUSH search?

Reason: Amended, weird sequence needs.

STIC,

Serial Number: NO- sequence compliance not required.

Please search the following short peptides- they are mutated regions of human VEGF.

- 1) CNSEMRECVPTES
- 2) HHEVVKFEDVLRSSCHPIE

pending
-issued
-commercial

hand enter
plg

Thanks.

Lorraine Spector

703-308-1793

U.S. Patent and Trademark Office

Art Unit 1647

Searcher: D. Schwebel
Phone: 308-4292
Location: CM1 6A03
Date Picked Up: _____
Searcher Prep/Review: 14 Completed
Clerical: _____
Online time: 37 7/24

TYPE OF SEARCH:
NA Sequences: _____
AA Sequences: 2
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST (where applic.)
STN: _____
DIALOG: _____
Questel/Orbit: _____
DRLink: _____
Lexis/Nexis: _____
Sequence Sys.: Compag
WWW/Internet: 16
Other (specify): _____

lorraine.spector@uspto.gov

CM1-10B11

Mailbox 10-B19

Searcher: _____
Phone: _____
Location: _____
Date Picked Up: _____
Searcher Prep/Review: _____
Clerical: _____
Online time: _____

TYPE OF SEARCH:

NA Sequences: _____
AA Sequences: _____
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST (where applic.)

STN: _____
DIALOG: _____
Questel/Orbit: _____
DRLink: _____
Lexis/Nexis: _____
Sequence Sys.: _____
WWW/Internet: _____
Other (specify): _____

Pending Nucleic Acid and/or Pending Amino Acid database searches now generate two sets of results. These databases were split into two parts to reduce the time needed to update the databases daily. The split freed up more machine time for processing searches.

Searches run against the Nucleic Acid Pending database produce two sets of results, with the extensions, **.rnpm** and **.rnpn**

Searches run against the Amino Acid Pending database produce two sets of results, with the extensions, **.rapm** and **.rapn**

The Pending database search results should not be left in the case because they contain data that is confidential.

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:47:39 ; Search time 27.1765 Seconds
(without alignments)
61.179 Million cell updates/sec

Title: PEPL
Perfect score: 78
Sequence: 1 CNSEMRCPVPTES 14

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 451899 seqs, 118759770 residues
Total number of hits satisfying chosen parameters: 451899

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

- Database : Published Applications AA:*
- 1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep.*
 - 2: /cgn2_6/ptodata/2/pubpaa/PTC_NEW_PUB.pep.*
 - 3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep.*
 - 4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep.*
 - 5: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep.*
 - 6: /cgn2_6/ptodata/2/pubpaa/PTC_PUBCOMB.pep.*
 - 7: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep.*
 - 8: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep.*
 - 9: /cgn2_6/ptodata/2/pubpaa/US09_PUBCOMB.pep.*
 - 10: /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep.*
 - 11: /cgn2_6/ptodata/2/pubpaa/US09C_PUBCOMB.pep.*
 - 12: /cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep.*
 - 13: /cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep.*
 - 14: /cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep.*
 - 15: /cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep.*
 - 16: /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep.*
 - 17: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep.*
 - 18: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	60	76.9	105	10	US-09-795-006A-159
2	60	76.9	105	10	US-09-795-006A-161
3	60	76.9	105	10	US-09-795-006A-163
4	60	76.9	105	10	US-09-795-006A-167
5	60	76.9	105	10	US-09-795-006A-171
6	60	76.9	105	10	US-09-795-006A-175
7	60	76.9	126	10	US-09-795-006A-55
8	60	76.9	126	10	US-09-795-006A-63
9	60	76.9	127	10	US-09-795-006A-87
10	60	76.9	127	10	US-09-795-006A-95
11	60	76.9	128	10	US-09-795-006A-71
12	60	76.9	128	10	US-09-795-006A-79
13	60	76.9	129	10	US-09-795-006A-103
14	60	76.9	129	10	US-09-795-006A-111
15	59	75.6	47	14	US-10-139-876-13

16	59	75.6	79	14	US-10-086-623-14	Sequence 14, Appl
17	59	75.6	79	15	US-10-260-539-14	Sequence 14, Appl
18	59	75.6	94	9	US-09-761-636A-2	Sequence 2, Appl
19	59	75.6	101	11	US-09-832-355A-2	Sequence 2, Appl
20	59	75.6	105	9	US-09-925-299-927	Sequence 927, App
21	59	75.6	105	10	US-09-795-006A-51	Sequence 51, Appl
22	59	75.6	105	10	US-09-795-006A-59	Sequence 59, Appl
23	59	75.6	105	10	US-09-795-006A-153	Sequence 153, Appl
24	59	75.6	105	10	US-09-795-006A-165	Sequence 165, App
25	59	75.6	105	10	US-09-795-006A-169	Sequence 169, App
26	59	75.6	105	10	US-09-795-006A-173	Sequence 173, App
27	59	75.6	105	11	US-09-925-299-927	Sequence 927, App
28	59	75.6	110	9	US-09-822-270-17	Sequence 17, Appl
29	59	75.6	110	14	US-10-083-817-11	Sequence 11, Appl
30	59	75.6	110	15	US-10-268-447-11	Sequence 11, Appl
31	59	75.6	121	11	US-09-832-355A-1	Sequence 1, Appl
32	59	75.6	126	10	US-09-795-006A-43	Sequence 43, Appl
33	59	75.6	127	10	US-09-795-006A-47	Sequence 47, Appl
34	59	75.6	127	10	US-09-795-006A-83	Sequence 83, Appl
35	59	75.6	127	10	US-09-795-006A-91	Sequence 91, Appl
36	59	75.6	128	10	US-09-795-006A-67	Sequence 67, Appl
37	59	75.6	128	10	US-09-795-006A-75	Sequence 75, Appl
38	59	75.6	129	10	US-09-795-006A-99	Sequence 99, Appl
39	59	75.6	129	10	US-09-795-006A-107	Sequence 107, App
40	59	75.6	141	15	US-10-298-794-2	Sequence 2, Appl
41	59	75.6	145	14	US-10-083-817-2	Sequence 2, Appl
42	59	75.6	145	15	US-10-268-447-4	Sequence 4, Appl
43	59	75.6	147	14	US-10-083-817-1	Sequence 1, Appl
44	59	75.6	147	15	US-10-268-447-2	Sequence 2, Appl
45	59	75.6	150	11	US-09-832-355A-61	Sequence 61, Appl

ALIGNMENTS

RESULT 1

US-09-795-006A-159
; Sequence 159, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:

; APPLICANT: Alitalo et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; TITLE OF INVENTION: ENDOTHELIAL GROWTH FACTOR DNAs AND PROTEINS
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795,006A
; CURRENT FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: 60/185,205
; PRIOR FILING DATE: 2000-02-23
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn ver. 2.0
; SEQ ID NO 159
; LENGTH: 105
; TYPE: PRT

; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of h
US-09-795-006A-159

Query Match: 76.9%; Score 60; DB 10; Length 105;
Best Local Similarity 78.6%; Pred. No. 0.019;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVPTES 14
|||||
Db 55 CNSEGLQCVPTES 68

RESULT 2

US-09-795-006A-161
; Sequence 161, Application US/09795006A
; Patent No. US20020151680A1

D635

GENERAL INFORMATION:
APPLICANT: Alitalo et al
TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
FILE REFERENCE: 28967/35977B
CURRENT APPLICATION NUMBER: US/09/795,006A
CURRENT FILING DATE: 2001-02-26
PRIOR APPLICATION NUMBER: US 60/205,331
PRIOR FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/185,205
PRIOR FILING DATE: 2000-02-25
NUMBER OF SEQ ID NOS: 175
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 161
LENGTH: 105
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-161

Query Match 76.9%; Score 60; DB 10; Length 105;
Best Local Similarity 78.6%; Pred. No. 0.019;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVTEES 14
||||| :|||||
Db 55 CNSEGLQCVPTES 68

RESULT 3

US-09-795-006A-163
Sequence 163, Application US/09795006A
Patent No. US20020151680A1
GENERAL INFORMATION:
APPLICANT: Alitalo et al
TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
FILE REFERENCE: 28967/35977B
CURRENT APPLICATION NUMBER: US/09/795,006A
CURRENT FILING DATE: 2001-02-26
PRIOR APPLICATION NUMBER: US 60/205,331
PRIOR FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/185,205
PRIOR FILING DATE: 2000-02-25
NUMBER OF SEQ ID NOS: 175
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 163
LENGTH: 105
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-163

Query Match 76.9%; Score 60; DB 10; Length 105;
Best Local Similarity 78.6%; Pred. No. 0.019;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVTEES 14
||||| :|||||
Db 54 CNSEGLQCVPTES 67

RESULT 4

US-09-795-006A-167
Sequence 167, Application US/09795006A
Patent No. US20020151680A1
GENERAL INFORMATION:
APPLICANT: Alitalo et al
TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
FILE REFERENCE: 28967/35977B

CURRENT APPLICATION NUMBER: US/09/795,006A
CURRENT FILING DATE: 2001-02-26
PRIOR APPLICATION NUMBER: US 60/205,331
PRIOR FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/185,205
PRIOR FILING DATE: 2000-02-25
NUMBER OF SEQ ID NOS: 175
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 167
LENGTH: 105
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-167

Query Match 76.9%; Score 60; DB 10; Length 105;
Best Local Similarity 78.6%; Pred. No. 0.019;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVTEES 14
||||| :|||||
Db 54 CNSEGLQCVPTES 67

RESULT 5

US-09-795-006A-171
Sequence 171, Application US/09795006A
Patent No. US20020151680A1
GENERAL INFORMATION:
APPLICANT: Alitalo et al
TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
FILE REFERENCE: 28967/35977B
CURRENT APPLICATION NUMBER: US/09/795,006A
CURRENT FILING DATE: 2001-02-26
PRIOR APPLICATION NUMBER: US 60/205,331
PRIOR FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/185,205
PRIOR FILING DATE: 2000-02-25
NUMBER OF SEQ ID NOS: 175
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 171
LENGTH: 105
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-171

Query Match 76.9%; Score 60; DB 10; Length 105;
Best Local Similarity 78.6%; Pred. No. 0.019;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVTEES 14
||||| :|||||
Db 54 CNSEGLQCVPTES 67

RESULT 6

US-09-795-006A-175
Sequence 175, Application US/09795006A
Patent No. US20020151680A1
GENERAL INFORMATION:
APPLICANT: Alitalo et al
TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
FILE REFERENCE: 28967/35977B
CURRENT APPLICATION NUMBER: US/09/795,006A
CURRENT FILING DATE: 2001-02-26
PRIOR APPLICATION NUMBER: US 60/205,331
PRIOR FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/185,205

; PRIOR FILING DATE: 2000-02-25
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 175
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-175

Query Match 76.9%; Score 60; DB 10; Length 105;
Best Local Similarity 78.6%; Pred. No. 0.019; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVPTES 14
||||| :|||||||
Db 54 CNSEGLQCVPTES 67

RESULT 7

US-09-795-006A-55
; Sequence 55, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Alitalo et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795,006A
; PRIOR FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 55
; LENGTH: 126
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-55

Query Match 76.9%; Score 60; DB 10; Length 126;
Best Local Similarity 78.6%; Pred. No. 0.023; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVPTES 14
||||| :|||||||
Db 54 CNSEGLQCVPTES 67

RESULT 8

US-09-795-006A-63
; Sequence 63, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Alitalo et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795,006A
; PRIOR FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 63
; LENGTH: 126

Query Match 76.9%; Score 60; DB 10; Length 126;
Best Local Similarity 78.6%; Pred. No. 0.023; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVPTES 14
||||| :|||||||
Db 54 CNSEGLQCVPTES 67

; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-63

Query Match 76.9%; Score 60; DB 10; Length 126;
Best Local Similarity 78.6%; Pred. No. 0.023; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVPTES 14
||||| :|||||||
Db 54 CNSEGLQCVPTES 67

RESULT 9

US-09-795-006A-87
; Sequence 87, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Alitalo et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795,006A
; PRIOR FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 87
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-87

Query Match 76.9%; Score 60; DB 10; Length 127;
Best Local Similarity 78.6%; Pred. No. 0.023; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVPTES 14
||||| :|||||||
Db 55 CNSEGLQCVPTES 68

RESULT 10

US-09-795-006A-95
; Sequence 95, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Alitalo et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795,006A
; PRIOR FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 95
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-95

Query Match 76.9%; Score 60; DB 10; Length 127;
Best Local Similarity 78.6%; Pred. No. 0.023; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVPTES 14
||||| :|||||||
Db 55 CNSEGLQCVPTES 68

; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-95

US-09-795-006A-95

Query Match 76.9%; Score 60; DB 10; Length 127;
Best Local Similarity 78.6%; Pred. No. 0.023; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVPTES 14
| | | | : | | | | |
DB 55 CNSEGLQCVPTES 68

RESULT 11

US-09-795-006A-71
; Sequence 71, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Allitao et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795.006A
; CURRENT FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 71
; LENGTH: 128
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-71

Query Match 76.9%; Score 60; DB 10; Length 128;
Best Local Similarity 78.6%; Pred. No. 0.023; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVPTES 14
| | | | : | | | | |
DB 54 CNSEGLQCVPTES 67

RESULT 12

US-09-795-006A-79
; Sequence 79, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Allitao et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795.006A
; CURRENT FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 79
; LENGTH: 128
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-79

Query Match 76.9%; Score 60; DB 10; Length 128;
Best Local Similarity 78.6%; Pred. No. 0.023;

Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVPTES 14
| | | | : | | | | |
DB 54 CNSEGLQCVPTES 67

RESULT 13
US-09-795-006A-103
; Sequence 103, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Allitao et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795.006A
; CURRENT FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 103
; LENGTH: 129
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-103

Query Match 76.9%; Score 60; DB 10; Length 129;
Best Local Similarity 78.6%; Pred. No. 0.024; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVPTES 14
| | | | : | | | | |
DB 55 CNSEGLQCVPTES 68

RESULT 14
US-09-795-006A-111
; Sequence 111, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Allitao et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795.006A
; CURRENT FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 111
; LENGTH: 129
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-111

Query Match 76.9%; Score 60; DB 10; Length 129;
Best Local Similarity 78.6%; Pred. No. 0.024; 2; Indels 0; Gaps 0;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCPVPTES 14
| | | | : | | | | |
DB 55 CNSEGLQCVPTES 68

```

RESULT 15
US-10-139-876-13
; Sequence 13, Application US/10139876
; Publication No. US20020123481A1
; GENERAL INFORMATION:
; APPLICANT: Oliviero, Salvatore
; TITLE OF INVENTION: C-Fos Induced Growth Factor (Figf) And Dna Encoding Same
; FILE REFERENCE: 35784/205172
; CURRENT APPLICATION NUMBER: US/10/139,876
; PRIOR FILING DATE: 2002-05-07
; PRIOR APPLICATION NUMBER: 09/043,476
; PRIOR FILING DATE: 1998-03-18
; PRIOR APPLICATION NUMBER: PCT/IB96/0113
; PRIOR FILING DATE: 1996-09-30
; PRIOR APPLICATION NUMBER: GB9612368.2
; PRIOR FILING DATE: 1996-06-13
; PRIOR APPLICATION NUMBER: GB9519928.7
; PRIOR FILING DATE: 1995-09-29
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 13
; LENGTH: 47
; TYPE: PRT
; ORGANISM: unknown
; FEATURE:
; OTHER INFORMATION: mammalian
; NAME/KEY: PEPTIDE
; LOCATION: (1)...(47)
; OTHER INFORMATION: segment of VEGF
US-10-139-876-13

```

```

Query Match      75.6%; Score 59; DB 14; Length 47;
Best Local Similarity 78.6%; Pred. No. 0.012;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY      1 CNSEMRECVPTES 14
        ||| | |||||
DB      1 CNDEGLECVPTES 14

```

Search completed: July 24, 2003, 15:02:50
Job time : 30.1765 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:08:24 Search time 47.7647 Seconds
(without alignments)
46.523 Million cell updates/sec

Title: PEPL

Perfect score: 78

Sequence: 1 CNSEMRCPVPTES 14

Scoring table: BLOSUM62

Gapop 10.0, Gapext 0.5

Searched: 1107863 seqs, 158726573 residues

Total number of hits satisfying chosen parameters: 1107863

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database:

A_Geneseq_19Jun03:*

1: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1980.DAT:*

2: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1981.DAT:*

3: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1982.DAT:*

4: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1983.DAT:*

5: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1984.DAT:*

6: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1985.DAT:*

7: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1986.DAT:*

8: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1987.DAT:*

9: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1988.DAT:*

10: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1989.DAT:*

11: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1990.DAT:*

12: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1991.DAT:*

13: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1992.DAT:*

14: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1993.DAT:*

15: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1994.DAT:*

16: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1995.DAT:*

17: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1996.DAT:*

18: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1997.DAT:*

19: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1998.DAT:*

20: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1999.DAT:*

21: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2000.DAT:*

22: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2001.DAT:*

23: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2002.DAT:*

24: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2003.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Query Match	Length	ID	Description
1	78	100.0	191 21	AA28234
2	78	100.0	191 21	AA28235
3	78	100.0	191 21	AA28236
4	60	76.9	105 22	AAU08470
5	60	76.9	105 22	AAU08471
6	60	76.9	105 22	AAU08472
7	60	76.9	105 22	AAU08473
8	60	76.9	105 22	AAU08476
9	60	76.9	105 22	AAU08478

10	60	76.9	126	AAU08409	Polypeptide encode
11	60	76.9	126	AAU08413	Polypeptide encode
12	60	76.9	127	AAU08425	Polypeptide encode
13	60	76.9	127	AAU08429	Polypeptide encode
14	60	76.9	128	AAU08417	Polypeptide encode
15	60	76.9	128	AAU08421	Polypeptide encode
16	60	76.9	129	AAU08433	Polypeptide encode
17	60	76.9	129	AAU08437	Polypeptide encode
18	59	75.6	65	AAU08403	VEGF exon III, Homo
19	59	75.6	66	AAU08409	Encoded by human V
20	59	75.6	94	AAU04521	Human VEGF amino a
21	59	75.6	101	AAE32330	Human VEGF-A recep
22	59	75.6	102	AAU08484	VEGFR-1 binding ep
23	59	75.6	105	AAU083387	Human colon cancer
24	59	75.6	105	AAU08407	Polypeptide encode
25	59	75.6	105	AAU08411	Polypeptide encode
26	59	75.6	105	AAU08467	Polypeptide encode
27	59	75.6	105	AAU08473	Polypeptide encode
28	59	75.6	105	AAU08475	Polypeptide encode
29	59	75.6	105	AAU08477	Polypeptide encode
30	59	75.6	110	AAU08417	Amino acid sequenc
31	59	75.6	110	AAU083038	Human vascular end
32	59	75.6	110	AAU08276	Primary sequence o
33	59	75.6	110	AAU08436	Human VEGF110, Ho
34	59	75.6	110	AAU08436	Human vascular end
35	59	75.6	121	AAU08385	Human vascular end
36	59	75.6	121	AAU08385	Human VEGF-121, H
37	59	75.6	121	AAU08385	Human VEGF-121, H
38	59	75.6	121	AAU08385	Human VEGF-121, H
39	59	75.6	121	AAU08385	Human VEGF-121, H
40	59	75.6	121	AAU08385	Human VEGF-121, H
41	59	75.6	121	AAU08385	Human VEGF-121, H
42	59	75.6	121	AAU08385	Human VEGF-121, H
43	59	75.6	121	AAU08385	Human VEGF-121, H
44	59	75.6	121	AAU08385	Human VEGF-121, H
45	59	75.6	121	AAU08385	Human VEGF-121, H

ALIGNMENTS

RESULT 1

AA28234

ID AA28234 standard; Protein: 191 AA.

XX AA28234;

AC AA28234;

DT 13-FEB-2001 (first entry)

DE Mutant human VEGF #2.

XX Human; vascular endothelial growth factor; VEGF; mutain; mutation;

KW Kinase domain region receptor; KDR; vasculogenesis; angiogenesis;

/KW surgical incision; wound; laceration; blood vessel; ulcer.

XX Homo sapiens.

OS Synthetic.

XX Key

XX Location/Qualifiers

FT Misc-difference 89

FT /note= "Wild-type Asp substituted by Ser"

FT Misc-difference 91

FT /note= "Wild-type Gly substituted by Met"

FT Misc-difference 92

FT /note= "Wild-type Leu substituted by Arg"

XX WO2000063380-A1.

XX 26-OCT-2000.

XX 10-APR-2000; 2000WO-US09483.

XX 16-APR-1999; 99US-0129788.

PR 23-FEB-2000; 2000US-0184235.
 XX (GETH) GENENTECH INC.
 XX
 PI Cunningham B, Abraham D, Li B;
 XX
 XX WPI; 2000-672736/65.
 XX
 PT Vascular endothelial growth factor variant useful for detecting kinase
 PT domain region receptor for diagnostic purposes, comprises one or more
 PT amino acid mutations in native VEGF and has selective binding affinity
 PT for the receptor
 XX
 PS Claim 5; Page -: 70pp; English.
 XX
 CC The present invention relates to mutant human vascular endothelial
 CC growth factor (VEGF) proteins (AAB28233-B28236). The present sequence is
 CC one such mutant. The mutant VEGF proteins have selective binding affinity
 CC for kinase domain region (KDR) receptor. The mutant VEGF proteins are
 CC useful for detecting KDR receptors for diagnostic purposes. In addition,
 CC the mutant VEGF proteins are useful for stimulating vasculogenesis or
 CC angiogenesis by exposing mammalian cells expressing a KDR receptor to
 CC the mutant proteins to treat trauma to the vascular network caused by
 CC surgical incisions, wounds, lacerations, penetration of blood vessels
 CC and surface ulcers.
 CC Note: the present sequence is not shown in the specification but is
 CC derived from the wild-type human VEGF sequence given in Fig 1.
 XX
 SQ Sequence 191 AA;

Query Match 100.0%; Score 78; DB 21; Length 191;
 Best Local Similarity 100.0%; Pred. No. 0.00029;
 Matches 14; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 CNSEMRRCVPTES 14
 DB 87 CNSEMRRCVPTES 100
 |||||

RESULT 2
 AAB28235
 ID AAB28235 standard; Protein; 191 AA.
 XX
 AC AAB28235;
 XX
 DT 13-FEB-2001 (first entry)
 XX
 DE Mutant human VEGF #3.
 XX
 KW Human; vascular endothelial growth factor; VEGF; mutein; mutation;
 KW kinase domain region receptor; KDR; vasculogenesis; angiogenesis;
 KW surgical incision; wound; laceration; blood vessel; ulcer.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 44
 FT FT /note= "Wild-type Met substituted by Glu"
 FT Misc-difference 89
 FT FT /note= "Wild-type Asp substituted by Ser"
 FT Misc-difference 91
 FT FT /note= "Wild-type Gly substituted by Met"
 FT Misc-difference 92
 FT FT /note= "Wild-type Leu substituted by Arg"
 XX
 PN WO200063380-A1.
 XX
 PD 26-OCT-2000.
 XX
 PF 10-APR-2000; 2000WO-US09483.
 XX
 PR 16-APR-1999; 99US-0129788.

PR 23-FEB-2000; 2000US-0184235.
 XX (GETH) GENENTECH INC.
 XX
 PI Cunningham B, Abraham D, Li B;
 XX
 XX WPI; 2000-672736/65.
 XX
 PT Vascular endothelial growth factor variant useful for detecting kinase
 PT domain region receptor for diagnostic purposes, comprises one or more
 PT amino acid mutations in native VEGF and has selective binding affinity
 PT for the receptor
 XX
 PS Claim 6; Page -: 70pp; English.
 XX
 CC The present invention relates to mutant human vascular endothelial
 CC growth factor (VEGF) proteins (AAB28233-B28236). The present sequence is
 CC one such mutant. The mutant VEGF proteins have selective binding affinity
 CC for kinase domain region (KDR) receptor. The mutant VEGF proteins are
 CC useful for detecting KDR receptors for diagnostic purposes. In addition,
 CC the mutant VEGF proteins are useful for stimulating vasculogenesis or
 CC angiogenesis by exposing mammalian cells expressing a KDR receptor to
 CC the mutant proteins to treat trauma to the vascular network caused by
 CC surgical incisions, wounds, lacerations, penetration of blood vessels
 CC and surface ulcers.
 CC Note: the present sequence is not shown in the specification but is
 CC derived from the wild-type human VEGF sequence given in Fig 1.
 XX
 SQ Sequence 191 AA;

Query Match 100.0%; Score 78; DB 21; Length 191;
 Best Local Similarity 100.0%; Pred. No. 0.00029;
 Matches 14; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 CNSEMRRCVPTES 14
 DB 87 CNSEMRRCVPTES 100
 |||||

RESULT 3
 AAB28236
 ID AAB28236 standard; Protein; 191 AA.
 XX
 AC AAB28236;
 XX
 DT 13-FEB-2001 (first entry)
 XX
 DE Mutant human VEGF #4.
 XX
 KW Human; vascular endothelial growth factor; VEGF; mutein; mutation;
 KW kinase domain region receptor; KDR; vasculogenesis; angiogenesis;
 KW surgical incision; wound; laceration; blood vessel; ulcer.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 47
 FT FT /note= "Wild-type Tyr substituted by Leu"
 FT Misc-difference 89
 FT FT /note= "Wild-type Asp substituted by Ser"
 FT Misc-difference 91
 FT FT /note= "Wild-type Gly substituted by Met"
 FT Misc-difference 92
 FT FT /note= "Wild-type Leu substituted by Arg"
 XX
 PN WO200063380-A1.
 XX
 PD 26-OCT-2000.
 XX
 PF 10-APR-2000; 2000WO-US09483.
 XX
 PR 16-APR-1999; 99US-0129788.

CC The present invention relates to polypeptides that bind cellular
 CC receptors for vascular endothelial growth factors (VEGFs), the
 CC polynucleotides encoding them, and their use for identifying agents that
 CC modulate interactions between VEGFs and their receptors. VEGFs and their
 CC receptors play an important role in vasculogenesis, the development of
 CC the embryonic vasculature from early differentiating endothelial cells
 CC and angiogenesis, the process of forming new blood vessels from
 CC pre-existing ones. Modulators of interactions between VEGF and its
 CC receptors may be used to treat dysfunction of the endothelial cell
 CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
 CC proliferative retinopathies, age-related macular degeneration, rheumatoid
 CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
 CC receptor binding profiles compared to known naturally occurring VEGFs.
 CC The present sequence represents the polypeptide encoded by human
 CC VEGF-A/VEGF-C hybrid construct clone 53-3.

XX SQ Sequence 105 AA;

Query Match 76.9%; Score 60; DB 22; Length 105;

Best Local Similarity 78.6%; Pred. No. 0.09; 2; Indels 0; Gaps 0;

Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

OY 1 CNSEMRCPTEES 14

DB 55 CNSEGLQCVTEES 68

RESULT 6

AAU08472
 ID AAU08472 standard; Protein; 105 AA.

XX AC AAU08472;

XX DT 21-NOV-2001 (first entry)

XX DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 82-7.

XX KW Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
 KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
 KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
 KW cardiovascular; VEGF-C; mutant; mutein.

XX OS Homo sapiens.

XX OS Synthetic.

XX PN WO200162942-A2.

XX PD 30-AUG-2001.

XX PF 26-FEB-2001; 2001WO-US06113.

XX XX 25-FEB-2000; 2000US-0185205.

XX PR 18-MAY-2000; 2000US-0205331.

XX XX (LUDW-) LUDWIG INST CANCER RES.

XX PA (LICN) LICENTIA OY.

XX PI Alitalo K, Jeltsch MM;

XX XX WPI; 2001-536640/59.

XX DR N-PSDB; AAS12891.

XX PT Polypeptides that bind cellular receptors for vascular endothelial
 PT growth factors, polynucleotides encoding them

XX PS Claim 47; Page 254-255; 261pp; English.

XX CC The present invention relates to polypeptides that bind cellular
 CC receptors for vascular endothelial growth factors (VEGFs), the
 CC polynucleotides encoding them, and their use for identifying agents that
 CC modulate interactions between VEGFs and their receptors. VEGFs and their
 CC receptors play an important role in vasculogenesis, the development of
 CC the embryonic vasculature from early differentiating endothelial cells

CC and angiogenesis, the process of forming new blood vessels from
 CC pre-existing ones. Modulators of interactions between VEGF and its
 CC receptors may be used to treat dysfunction of the endothelial cell
 CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
 CC proliferative retinopathies, age-related macular degeneration, rheumatoid
 CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
 CC receptor binding profiles compared to known naturally occurring VEGFs.
 CC The present sequence represents the polypeptide encoded by human
 CC VEGF-A/VEGF-C hybrid construct clone 82-7.

XX SQ Sequence 105 AA;

Query Match 76.9%; Score 60; DB 22; Length 105;

Best Local Similarity 78.6%; Pred. No. 0.09; 2; Indels 0; Gaps 0;

Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

OY 1 CNSEMRCPTEES 14

DB 54 CNSEGLQCVTEES 67

RESULT 7

AAU08474
 ID AAU08474 standard; Protein; 105 AA.

XX AC AAU08474;

XX DT 21-NOV-2001 (first entry)

XX DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 82-11.

XX KW Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
 KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
 KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
 KW cardiovascular; VEGF-C; mutant; mutein.

XX OS Homo sapiens.

XX OS Synthetic.

XX PN WO200162942-A2.

XX PD 30-AUG-2001.

XX PF 26-FEB-2001; 2001WO-US06113.

XX XX 25-FEB-2000; 2000US-0185205.

XX PR 18-MAY-2000; 2000US-0205331.

XX XX (LUDW-) LUDWIG INST CANCER RES.

XX PA (LICN) LICENTIA OY.

XX PI Alitalo K, Jeltsch MM;

XX XX WPI; 2001-536640/59.

XX DR N-PSDB; AAS12893.

XX PT Polypeptides that bind cellular receptors for vascular endothelial
 PT growth factors, polynucleotides encoding them

XX PS Claim 49; Page 257; 261pp; English.

XX CC The present invention relates to polypeptides that bind cellular
 CC receptors for vascular endothelial growth factors (VEGFs), the
 CC polynucleotides encoding them, and their use for identifying agents that
 CC modulate interactions between VEGFs and their receptors. VEGFs and their
 CC receptors play an important role in vasculogenesis, the development of
 CC the embryonic vasculature from early differentiating endothelial cells
 CC and angiogenesis, the process of forming new blood vessels from
 CC pre-existing ones. Modulators of interactions between VEGF and its
 CC receptors may be used to treat dysfunction of the endothelial cell
 CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
 CC proliferative retinopathies, age-related macular degeneration, rheumatoid
 CC arthritis and psoriasis. The polypeptides of the invention exhibit unique

CC receptor binding profiles compared to known naturally occurring VEGFs.
 CC The present sequence represents the polypeptide encoded by human
 CC VEGF-A/VEGF-C hybrid construct clone 82-11.

XX Sequence 105 AA;
 SQ Query Match 76.9%; Score 60; DB 22; Length 105;
 Best Local Similarity 78.6%; Pred. No. 0.09;
 Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

OY 1 CNSEMRRCVPTTES 14
 DB 54 CNSEGLQCVPTTES 67
 IIII :IIIIII

RESULT 8
 AAU08476
 ID AAU08476 standard; Protein; 105 AA.

XX AC AAU08476;
 XX 21-NOV-2001 (first entry)
 XX Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 82-15.
 DE Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
 XX angiogenesis; blood vessel; cancer; proliferative retinopathy;
 KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
 KW cardiovascular; VEGF-C; mutant; mutein.

XX OS Homo sapiens.
 OS Synthetic.
 XX WO200162942-A2.
 PN 30-AUG-2001.

XX 26-FEB-2001; 2001WO-US06113.
 XX 25-FEB-2000; 2000US-0185205.
 PR 18-MAY-2000; 2000US-0205331.

XX (LUDW-) LUDWIG INST CANCER RES.
 PA (LICN) LICENTIA OY.

XX PI Alitalo K, Jeltsch MM;
 XX WPI; 2001-536640/59.
 DR N-PSDB; AAS12895.

XX Polypeptides that bind cellular receptors for vascular endothelial
 PT growth factors, polynucleotides encoding them -

XX Claim 51; Page 259; 261pp; English.

XX The present invention relates to polypeptides that bind cellular
 CC receptors for vascular endothelial growth factors (VEGFs), the
 CC polynucleotides encoding them, and their use for identifying agents that
 CC modulate interactions between VEGFs and their receptors. VEGFs and their
 CC receptors play an important role in vasculogenesis, the development of
 CC the embryonic vasculature from early differentiating endothelial cells
 CC and angiogenesis, the process of forming new blood vessels from
 CC pre-existing ones. Modulators of interactions between VEGF and its
 CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
 CC proliferative retinopathies, age-related macular degeneration, rheumatoid
 CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
 CC receptor binding profiles compared to known naturally occurring VEGFs.
 CC The present sequence represents the polypeptide encoded by human
 CC VEGF-A/VEGF-C hybrid construct clone 82-15.

XX Sequence 105 AA;
 SQ

Query Match 76.9%; Score 60; DB 22; Length 105;
 Best Local Similarity 78.6%; Pred. No. 0.09;
 Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

OY 1 CNSEMRRCVPTTES 14
 DB 54 CNSEGLQCVPTTES 67
 IIII :IIIIII

RESULT 9
 AAU08478
 ID AAU08478 standard; Protein; 105 AA.

XX AC AAU08478;
 XX 21-NOV-2001 (first entry)
 XX Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 84-11.
 DE Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
 XX angiogenesis; blood vessel; cancer; proliferative retinopathy;
 KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
 KW cardiovascular; VEGF-C; mutant; mutein.

XX OS Homo sapiens.
 OS Synthetic.
 XX WO200162942-A2.
 PN 30-AUG-2001.

XX 26-FEB-2001; 2001WO-US06113.
 XX 25-FEB-2000; 2000US-0185205.
 PR 18-MAY-2000; 2000US-0205331.

XX (LUDW-) LUDWIG INST CANCER RES.
 PA (LICN) LICENTIA OY.

XX PI Alitalo K, Jeltsch MM;
 XX WPI; 2001-536640/59.
 DR N-PSDB; AAS12897.

XX Polypeptides that bind cellular receptors for vascular endothelial
 PT growth factors, polynucleotides encoding them -
 XX Claim 53; Page 261; 261pp; English.

XX The present invention relates to polypeptides that bind cellular
 CC receptors for vascular endothelial growth factors (VEGFs), the
 CC polynucleotides encoding them, and their use for identifying agents that
 CC modulate interactions between VEGFs and their receptors. VEGFs and their
 CC receptors play an important role in vasculogenesis, the development of
 CC the embryonic vasculature from early differentiating endothelial cells
 CC and angiogenesis, the process of forming new blood vessels from
 CC pre-existing ones. Modulators of interactions between VEGF and its
 CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
 CC proliferative retinopathies, age-related macular degeneration, rheumatoid
 CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
 CC receptor binding profiles compared to known naturally occurring VEGFs.
 CC The present sequence represents the polypeptide encoded by human
 CC VEGF-A/VEGF-C hybrid construct clone 84-11.

XX Sequence 105 AA;
 SQ

Query Match 76.9%; Score 60; DB 22; Length 105;
 Best Local Similarity 78.6%; Pred. No. 0.09;
 Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

OY 1 CNSEMRRCVPTTES 14
 DB 54 CNSEGLQCVPTTES 67
 IIII :IIIIII

Db 54 CNSEGLQCVPTES 67

RESULT 10

AAU08409
ID AAU08409 standard; Protein; 126 AA.

XX AC AAU08409;

XX DT 21-NOV-2001 (first entry)

XX DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 12-3.

XX KW Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
XX KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
XX KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
XX KW cardiovascular; VEGF-C; mutant; mutein.

XX OS Homo sapiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers
XX FT Domain 1..102

XX FT /note= "VEGF receptor binding domain"

XX PN WO200162942-A2.

XX PD 30-AUG-2001.

XX PF 26-FEB-2001; 2001WO-US061113.

XX PR 25-FEB-2000; 2000US-0185205.

XX PR 18-MAY-2000; 2000US-0205331.

XX PA (LUDW-) LUDWIG INST CANCER RES.

XX PA (LICN) LICENTIA OY.

XX PI Alitalo K, Jeltsch MM;

XX WPI; 2001-536640/59.

XX DR N-PSDB; AAS12846.

XX PT Polypeptides that bind cellular receptors for vascular endothelial
XX PT growth factors, polynucleotides encoding them -

XX PS Example 3; Page 184; 261pp; English..

XX CC The present invention relates to polypeptides that bind cellular
XX CC receptors for vascular endothelial growth factors (VEGFs), the
XX CC polynucleotides encoding them, and their use for identifying agents that
XX CC modulate interactions between VEGFs and their receptors. VEGFs and their
XX CC receptors play an important role in vasculogenesis, the development of
XX CC the embryonic vasculature from early differentiating endothelial cells
XX CC and angiogenesis, the process of forming new blood vessels from
XX CC pre-existing ones. Modulators of interactions between VEGF and its
XX CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
XX CC proliferative retinopathies, age-related macular degeneration, rheumatoid
XX CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
XX CC receptor binding profiles compared to known naturally occurring VEGFs.
XX CC The present sequence represents the polypeptide encoded by human
XX CC VEGF-A/VEGF-C hybrid construct clone 12-3.

XX SQ Sequence 126 AA;

Query Match 76.9%; Score 60; DB 22; Length 126;

Best Local Similarity 78.6%; Pred. No. 0.11; Mismatches 1; Indels 0; Gaps 0;

Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Oy 1 CNSEMRQCVPTES 14

Db 54 CNSEGLQCVPTES 67

RESULT 12

RESULT 11

AAU08413
ID AAU08413 standard; Protein; 126 AA.

XX AC AAU08413;

XX DT 21-NOV-2001 (first entry)

XX DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 12-7.

XX KW Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
XX KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
XX KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
XX KW cardiovascular; VEGF-C; mutant; mutein.

XX OS Homo sapiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers
XX FT Domain 1..102

XX FT /note= "VEGF receptor binding domain"

XX PN WO200162942-A2.

XX PD 30-AUG-2001.

XX PF 26-FEB-2001; 2001WO-US061113.

XX PR 25-FEB-2000; 2000US-0185205.

XX PR 18-MAY-2000; 2000US-0205331.

XX PA (LUDW-) LUDWIG INST CANCER RES.

XX PA (LICN) LICENTIA OY.

XX PI Alitalo K, Jeltsch MM;

XX WPI; 2001-536640/59.

XX DR N-PSDB; AAS12850.

XX PT Polypeptides that bind cellular receptors for vascular endothelial
XX PT growth factors, polynucleotides encoding them -

XX PS Claim 37; Page 189; 261pp; English.

XX CC The present invention relates to polypeptides that bind cellular
XX CC receptors for vascular endothelial growth factors (VEGFs), the
XX CC polynucleotides encoding them, and their use for identifying agents that
XX CC modulate interactions between VEGFs and their receptors. VEGFs and their
XX CC receptors play an important role in vasculogenesis, the development of
XX CC the embryonic vasculature from early differentiating endothelial cells
XX CC and angiogenesis, the process of forming new blood vessels from
XX CC pre-existing ones. Modulators of interactions between VEGF and its
XX CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
XX CC proliferative retinopathies, age-related macular degeneration, rheumatoid
XX CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
XX CC receptor binding profiles compared to known naturally occurring VEGFs.
XX CC The present sequence represents the polypeptide encoded by human
XX CC VEGF-A/VEGF-C hybrid construct clone 12-7.

XX SQ Sequence 126 AA;

Query Match 76.9%; Score 60; DB 22; Length 126;

Best Local Similarity 78.6%; Pred. No. 0.11; Mismatches 1; Indels 0; Gaps 0;

Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Oy 1 CNSEMRQCVPTES 14

Db 54 CNSEGLQCVPTES 67

AAU08425
ID AAU08425 standard; Protein: 127 AA.

XX AC
XX AC
XX AC
XX AC

21-NOV-2001 (first entry)

Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 31-3.

Human: vascular endothelial growth factor; VEGF-A; vasculogenesis;
angiogenesis; blood vessel; cancer; proliferative retinopathy;
psoriasis; age-related macular degeneration; rheumatoid arthritis;
cardiovascular; VEGF-C; mutant; mutein.

OS Homo sapiens.
OS Synthetic.

Key Location/Qualifiers
Domain 1..103

FT /note= "VEGF receptor binding domain"

WO200162942-A2.

30-AUG-2001.

26-FEB-2001; 2001WO-US06113.

25-FEB-2000; 2000US-0185205.

18-MAY-2000; 2000US-0205331.

(LUDW-) LUDWIG INST CANCER RES.

(LICN) LICENTIA OY.

Alitalo K, Jeltsch MM;
WPI; 2001-536640/59.

N-PSDB; AAS12862.

Polypeptides that bind cellular receptors for vascular endothelial
growth factors, polynucleotides encoding them -

Example 3; Page 204; 261pp; English.

The present invention relates to polypeptides that bind cellular
receptors for vascular endothelial growth factors (VEGFs), the
polynucleotides encoding them, and their use for identifying agents that
modulate interactions between VEGFs and their receptors. VEGFs and their
receptors play an important role in vasculogenesis, the development of
the embryonic vasculature from early differentiating endothelial cells
and angiogenesis, the process of forming new blood vessels from
pre-existing ones. Modulators of interactions between VEGF and its
receptors may be used to treat dysfunction of the endothelial cell
regulatory system. Such disorders include cancers, abnormal angiogenesis,
proliferative retinopathies, age-related macular degeneration, rheumatoid
arthritis and psoriasis. The polypeptides of the invention exhibit unique
receptor binding profiles compared to known naturally occurring VEGFs.
The present sequence represents the polypeptide encoded by human
VEGF-A/VEGF-C hybrid construct clone 31-3.

Sequence 127 AA;

Query Match 76.9%; Score 60; DB 22; Length 127;

Best Local Similarity 78.6%; Pred. No. 0.11;

Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRECVPTES 14

Db 55 CNSEGLQCVPTES 68

RESULT 13

AAU08429

ID AAU08429 standard; Protein: 127 AA.

XX

AC

XX

DT

XX

DE

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

XX

```

XX DT 21-NOV-2001 (first entry)
XX DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 12-11.
XX KW Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
XX KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
XX KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
XX KW cardiovascular; VEGF-C; mutant; mutein.
XX OS Homo sapiens.
XX OS Synthetic.
XX FH Key
XX FT Domain 1..104
XX FT /note= "VEGF receptor binding domain"
XX PN WO200162942-A2.
XX PD 30-AUG-2001.
XX PF 26-FEB-2001; 2001WO-US06113.
XX PR 25-FEB-2000; 2000US-0185205.
XX PR 18-MAY-2000; 2000US-0205331.
XX PA (LUDW-) LUDWIG INST CANCER RES.
XX PA (LICN ) LICENTIA OV.
XX PI Alitalo K, Jeltsch MM;
XX DR WPI; 2001-536640/59.
XX DR N-PSDB; AAS12854.
XX PT Polypeptides that bind cellular receptors for vascular endothelial
XX PT growth factors, polynucleotides encoding them -
XX PS Claim 39; Page 194; 261pp; English.
XX CC The present invention relates to polypeptides that bind cellular
XX CC receptors for vascular endothelial growth factors (VEGFs), the
XX CC polynucleotides encoding them, and their use for identifying agents that
XX CC modulate interactions between VEGFs and their receptors. VEGFs and their
XX CC receptors play an important role in vasculogenesis, the development of
XX CC the embryonic vasculature from early differentiating endothelial cells
XX CC and angiogenesis, the process of forming new blood vessels from
XX CC pre-existing ones. Modulators of interactions between VEGF and its
XX CC receptors may be used to treat dysfunction of the endothelial cell
XX CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
XX CC proliferative retinopathies, age-related macular degeneration, rheumatoid
XX CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
XX CC receptor binding profiles compared to known naturally occurring VEGFs.
XX CC The present sequence represents the polypeptide encoded by human
XX CC VEGF-A/VEGF-C hybrid construct clone 12-11.
XX SQ Sequence 128 AA;

Query Match 76.9%; Score 60; DB 22; Length 128;
Best Local Similarity 78.6%; Pred. No. 0.11;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCEVPTES 14
    |||| :|||||
DB 54 CNSEGLQCVPTES 67

RESULT 15
AAU08421
ID AAU08421 standard; Protein; 128 AA.
XX AC AAU08421;
XX DT 21-NOV-2001 (first entry)

```

```

XX DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 12-15.
XX KW Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
XX KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
XX KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
XX KW cardiovascular; VEGF-C; mutant; mutein.
XX OS Homo sapiens.
XX OS Synthetic.
XX FH Key
XX FT Domain 1..104
XX FT /note= "VEGF receptor binding domain"
XX PN WO200162942-A2.
XX PD 30-AUG-2001.
XX PF 26-FEB-2001; 2001WO-US06113.
XX PR 25-FEB-2000; 2000US-0185205.
XX PR 18-MAY-2000; 2000US-0205331.
XX PA (LUDW-) LUDWIG INST CANCER RES.
XX PA (LICN ) LICENTIA OV.
XX PI Alitalo K, Jeltsch MM;
XX DR WPI; 2001-536640/59.
XX DR N-PSDB; AAS12858.
XX PT Polypeptides that bind cellular receptors for vascular endothelial
XX PT growth factors, polynucleotides encoding them -
XX PS Example 3; Page 199; 261pp; English.
XX CC The present invention relates to polypeptides that bind cellular
XX CC receptors for vascular endothelial growth factors (VEGFs), the
XX CC polynucleotides encoding them, and their use for identifying agents that
XX CC modulate interactions between VEGFs and their receptors. VEGFs and their
XX CC receptors play an important role in vasculogenesis, the development of
XX CC the embryonic vasculature from early differentiating endothelial cells
XX CC and angiogenesis, the process of forming new blood vessels from
XX CC pre-existing ones. Modulators of interactions between VEGF and its
XX CC receptors may be used to treat dysfunction of the endothelial cell
XX CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
XX CC proliferative retinopathies, age-related macular degeneration, rheumatoid
XX CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
XX CC receptor binding profiles compared to known naturally occurring VEGFs.
XX CC The present sequence represents the polypeptide encoded by human
XX CC VEGF-A/VEGF-C hybrid construct clone 12-15.
XX SQ Sequence 128 AA;

Query Match 76.9%; Score 60; DB 22; Length 128;
Best Local Similarity 78.6%; Pred. No. 0.11;
Matches 11; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 CNSEMRCEVPTES 14
    |||| :|||||
DB 54 CNSEGLQCVPTES 67

Search completed: July 24, 2003, 14:45:44
Job time : 49.2647 secs

```

Result No.	Score	Match	Length	DB	ID	Description
1	59	75.6	65	4	US-09-244-583-12	Sequence 12, Appl
2	59	75.6	109	3	US-08-691-794-3	Sequence 3, Appl
3	59	75.6	110	4	US-09-392-932-11	Sequence 11, Appl
4	59	75.6	110	4	US-09-574-708A-11	Sequence 11, Appl
5	59	75.6	110	4	US-09-822-270-17	Sequence 17, Appl
6	59	75.6	121	6	5194596-19	Patent No. 5194596
7	59	75.6	121	6	5219739-20	Patent No. 5219739
8	59	75.6	136	4	US-09-037-983C-15	Sequence 15, Appl
9	59	75.6	137	4	US-09-037-983C-17	Sequence 17, Appl
10	59	75.6	138	4	US-09-037-983C-16	Sequence 16, Appl
11	59	75.6	141	4	US-09-519-476-2	Sequence 2, Appl
12	59	75.6	145	3	US-08-784-551C-2	Sequence 2, Appl
13	59	75.6	145	4	US-09-392-932-2	Sequence 2, Appl
14	59	75.6	145	4	US-09-574-708A-4	Sequence 4, Appl
15	59	75.6	145	4	US-09-037-983C-2	Sequence 2, Appl
16	59	75.6	147	3	US-08-907-992B-1	Sequence 1, Appl
17	59	75.6	147	4	US-09-392-932-1	Sequence 1, Appl
18	59	75.6	147	4	US-08-706-054A-4	Sequence 4, Appl
19	59	75.6	147	4	US-09-574-708A-2	Sequence 2, Appl
20	59	75.6	147	4	US-09-313-299-4	Sequence 4, Appl
21	59	75.6	164	4	US-09-244-583-24	Sequence 24, Appl
22	59	75.6	165	4	US-08-882-816-3	Sequence 3, Appl
23	59	75.6	165	4	US-08-802-052B-3	Sequence 3, Appl
24	59	75.6	165	6	5194596-18	Patent No. 5194596
25	59	75.6	165	6	5219739-19	Patent No. 5219739
26	59	75.6	188	4	US-09-244-583-28	Sequence 28, Appl
27	59	75.6	191	3	US-08-567-200A-2	Sequence 2, Appl

STATE: California
COUNTRY: United States
ZIP: 94111-4187
COMPUTER TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/691,794
FILING DATE: 02-AUG-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/002,827
FILING DATE: 25-AUG-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/567,200
FILING DATE: 05-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Dreger, Walter H.
REGISTRATION NUMBER: 24,190
REFERENCE/DOCKET NUMBER: A-63758/WHD
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 781-1989
TELEFAX: (415) 398-3249
TELEX: 910 277299
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 109 amino acids
TYPE: amino acid
STRANDEDNESS: unknown
TOPOLOGY: unknown
MOLECULE TYPE: protein
US-08-691-794-3

Query Match 75.6%; Score 59; DB 3; Length 109;
Best Local Similarity 78.6%; Pred. No. 0.035;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRECVPTES 14
||| |||||
DB 61 CNDEGLECVPTES 74

RESULT 3
US-09-392-932-11
Sequence 11, Application US/09392932
Patent No. 6352975
GENERAL INFORMATION:
APPLICANT: Schreiner, George F.
APPLICANT: Johnson, Richard J.
TITLE OF INVENTION: METHODS OF TREATING HYPERTENSION AND
TITLE OF INVENTION: COMPOSITIONS FOR USE THEREIN
FILE REFERENCE: SCIOS-002A
CURRENT APPLICATION NUMBER: US/09/392,932
CURRENT FILING DATE: 1999-09-09
EARLIER APPLICATION NUMBER: 60/099,694
EARLIER FILING DATE: 1998-09-09
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 11
LENGTH: 110
TYPE: PRT
ORGANISM: Homo Sapiens
US-09-392-932-11

Query Match 75.6%; Score 59; DB 4; Length 110;
Best Local Similarity 78.6%; Pred. No. 0.035;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRECVPTES 14
||| |||||
DB 61 CNDEGLECVPTES 74

RESULT 4
US-09-574-708A-11
Sequence 11, Application US/09574708A
Patent No. 6475796
GENERAL INFORMATION:
APPLICANT: N. Stephen Pollitt
APPLICANT: Judith A. Abraham
TITLE OF INVENTION: Vascular endothelial growth factor
TITLE OF INVENTION: variants
FILE REFERENCE: SCIOS004A
CURRENT APPLICATION NUMBER: US/09/574,708A
CURRENT FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/135,312
PRIOR FILING DATE: 1999-05-20
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 11
LENGTH: 110
TYPE: PRT
ORGANISM: Homo sapiens
US-09-574-708A-11

Query Match 75.6%; Score 59; DB 4; Length 110;
Best Local Similarity 78.6%; Pred. No. 0.035;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRECVPTES 14
||| |||||
DB 61 CNDEGLECVPTES 74

RESULT 5
US-09-822-270-17
Sequence 17, Application US/09822270
Patent No. 6559126
GENERAL INFORMATION:
APPLICANT: TOURNAIRE, ROSELYNE
APPLICANT: DEMANGEL, CAROLINE
APPLICANT: DERBIN, CLAUDE
APPLICANT: PERRET, GERARD
APPLICANT: MAZIE, JEAN-CLAUDE
APPLICANT: PLOUET, JEAN
APPLICANT: VASSAY, ROGER
TITLE OF INVENTION: PEPTIDES BLOCKING VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF)-M
TITLE OF INVENTION: ANGIOGENESIS, POLYNUCLEOTIDES ENCODING SAID PEPTIDES AND METI
FILE REFERENCE: 205060050
CURRENT APPLICATION NUMBER: US/09/822,270
CURRENT FILING DATE: 2001-04-02
PRIOR APPLICATION NUMBER: US 60/193,396
PRIOR FILING DATE: 2000-03-31
NUMBER OF SEQ ID NOS: 17
SOFTWARE: Patent in version 3.1
SEQ ID NO 17
LENGTH: 110
TYPE: PRT
ORGANISM: ARTIFICIAL SEQUENCE
FEATURE:
OTHER INFORMATION: SYNTHETIC PEPTIDE
US-09-822-270-17

Query Match 75.6%; Score 59; DB 4; Length 110;
Best Local Similarity 78.6%; Pred. No. 0.035;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRECVPTES 14
||| |||||
DB 61 CNDEGLECVPTES 74

RESULT 6
5194596-19

Patent No. 5194596
; APPLICANT: FISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES, JOHN
; C. MITCHELL, RICHARD L.
; TITLE OF INVENTION: PRODUCTION OF VASCULAR ENDOTHELIAL CELL
; GROWTH FACTOR
; NUMBER OF SEQUENCES: 32
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/450,883
; FILING DATE: 14-DEC-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 387,545
; FILING DATE: 27-JUL-1989
; SEQ ID NO:19:
; LENGTH: 121
5194596-19

Query Match 75.6%; Score 59; DB 6; Length 121;
Best Local Similarity 78.6%; Pred. No. 0.038;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRECVPTES 14
||| |||||
Db 61 CNDEGLECVPTES 74

RESULT 7

5219739-20
Patent No. 5219739
; APPLICANT: FISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES,
; JOHN C.; MITCHELL, RICHARD L.
; TITLE OF INVENTION: DNA SEQUENCES ENCODING BVGEF120 AND
; BVGEF 121 AND METHODS FOR THE PRODUCTION OF BOVINE AND HUMAN
; VASCULAR ENDOTHELIAL CELL GROWTH FACTORS, BVGEF120 AND BVGEF121
; NUMBER OF SEQUENCES: 40
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/559,041
; FILING DATE: 27-JUL-1990
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 450,883
; FILING DATE: 14-DEC-1989
; APPLICATION NUMBER: 387,545
; FILING DATE: 27-JUL-1989
; SEQ ID NO:20:
; LENGTH: 121
5219739-20

Query Match 75.6%; Score 59; DB 6; Length 121;
Best Local Similarity 78.6%; Pred. No. 0.038;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRECVPTES 14
||| |||||
Db 61 CNDEGLECVPTES 74

RESULT 8

US-09-037-983C-15
; Sequence 15, Application US/09037983C
; Patent No. 6583276
; GENERAL INFORMATION:
; APPLICANT: Newfield, Gera
; APPLICANT: Keshet, Eli
; APPLICANT: Vlodavsky, Israel
; APPLICANT: Poltorak, Zoya
; TITLE OF INVENTION: Angiogenic Factor and Use Thereof in Treating Cardiovascular Disease
; FILE REFERENCE: 000274-00009
; CURRENT APPLICATION NUMBER: US/09/037,983C
; CURRENT FILING DATE: 1998-03-11
; PRIOR APPLICATION NUMBER: 60/025,537
; PRIOR FILING DATE: 1996-09-06
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 15

LENGTH: 136
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-037-983C-15

Query Match 75.6%; Score 59; DB 4; Length 136;
Best Local Similarity 78.6%; Pred. No. 0.043;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRECVPTES 14
||| |||||
Db 61 CNDEGLECVPTES 74

RESULT 9

US-09-037-983C-17
; Sequence 17, Application US/09037983C
; Patent No. 6583276
; GENERAL INFORMATION:
; APPLICANT: Newfield, Gera
; APPLICANT: Keshet, Eli
; APPLICANT: Vlodavsky, Israel
; APPLICANT: Poltorak, Zoya
; TITLE OF INVENTION: Angiogenic Factor and Use Thereof in Treating Cardiovascular Disease
; FILE REFERENCE: 000274-00009
; CURRENT APPLICATION NUMBER: US/09/037,983C
; CURRENT FILING DATE: 1998-03-11
; PRIOR APPLICATION NUMBER: 60/025,537
; PRIOR FILING DATE: 1996-09-06
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 17
; LENGTH: 137
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-037-983C-17

Query Match 75.6%; Score 59; DB 4; Length 137;
Best Local Similarity 78.6%; Pred. No. 0.043;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRECVPTES 14
||| |||||
Db 61 CNDEGLECVPTES 74

RESULT 10

US-09-037-983C-16
; Sequence 16, Application US/09037983C
; Patent No. 6583276
; GENERAL INFORMATION:
; APPLICANT: Newfield, Gera
; APPLICANT: Keshet, Eli
; APPLICANT: Vlodavsky, Israel
; APPLICANT: Poltorak, Zoya
; TITLE OF INVENTION: Angiogenic Factor and Use Thereof in Treating Cardiovascular Disease
; FILE REFERENCE: 000274-00009
; CURRENT APPLICATION NUMBER: US/09/037,983C
; CURRENT FILING DATE: 1998-03-11
; PRIOR APPLICATION NUMBER: 60/025,537
; PRIOR FILING DATE: 1996-09-06
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 16
; LENGTH: 138
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-037-983C-16

Query Match 75.6%; Score 59; DB 4; Length 138;
Best Local Similarity 78.6%; Pred. No. 0.044;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CENSEMRECVPTES 14
||| |||||
Db 61 CNDEGLECVPTES 74

RESULT 11
US-09-519-476-2
; Sequence 2, Application US/09519476
; Patent No. 650884
; GENERAL INFORMATION:
; APPLICANT: MINTZ, Liat et al.
; TITLE OF INVENTION: NOVEL NUCLEIC ACID AND AMINO ACID SEQUENCES
; FILE REFERENCE: 2786-0149P
; CURRENT APPLICATION NUMBER: US/09/519,476
; CURRENT FILING DATE: 2000-03-09
; PRIOR APPLICATION NUMBER: IL128852
; PRIOR FILING DATE: 1999-03-05
; NUMBER OF SEQ ID NOS: 2
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 2
; LENGTH: 141
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-519-476-2

Query Match 75.6%; Score 59; DB 4; Length 141;
Best Local Similarity 78.6%; Pred. No. 0.045;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CENSEMRECVPTES 14
||| |||||
Db 87 CNDEGLECVPTES 100

RESULT 12
US-08-784-551C-2
; Sequence 2, Application US/08784551C
; Patent No. 6013780
; GENERAL INFORMATION:
; APPLICANT: Gera Neufeld
; APPLICANT: Eli Keshet
; APPLICANT: Israel Vlodavsky
; APPLICANT: Zoya Poltorak
; TITLE OF INVENTION: ANGIOGENIC FACTOR AND USE THEREOF
; TITLE OF INVENTION: IN TREATING CARDIOVASCULAR DISEASE
; NUMBER OF SEQUENCES: 9
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Blank, Rome, Comisky & McCauley LLP
; STREET: 900 17th Street, N.W.
; STREET: Suite 1000
; CITY: Washington, D.C.
; STATE: N/A
; COUNTRY: U.S.A.
; ZIP: 20006
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
; MEDIUM TYPE: storage
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: IBM P.C. DOS 5.0
; SOFTWARE: FastSeq for Windows 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/784,551C
; FILING DATE: January 21, 1997
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Cohen, Herbert
; REGISTRATION NUMBER: 25,109
; REFERENCE/DOCKET NUMBER: 0274.005/P003
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (202) 463-7700

; TELEFAX: (202) 463-6915
; TELEX:
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 145 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
US-08-784-551C-2

Query Match 75.6%; Score 59; DB 3; Length 145;
Best Local Similarity 78.6%; Pred. No. 0.046;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CENSEMRECVPTES 14
||| |||||
Db 61 CNDEGLECVPTES 74

RESULT 13
US-09-392-932-2
; Sequence 2, Application US/09392932
; Patent No. 6352975
; GENERAL INFORMATION:
; APPLICANT: Schreiner, George F.
; APPLICANT: Johnson, Richard J.
; TITLE OF INVENTION: METHODS OF TREATING HYPERTENSION AND
; TITLE OF INVENTION: COMPOSITIONS FOR USE THEREIN
; FILE REFERENCE: SCIOS 002A
; CURRENT APPLICATION NUMBER: US/09/392,932
; CURRENT FILING DATE: 1999-09-09
; EARLIER APPLICATION NUMBER: 60/099,694
; EARLIER FILING DATE: 1998-09-09
; NUMBER OF SEQ ID NOS: 11
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 145
; TYPE: PRT
; ORGANISM: Homo Sapiens
US-09-392-932-2

Query Match 75.6%; Score 59; DB 4; Length 145;
Best Local Similarity 78.8%; Pred. No. 0.046;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CENSEMRECVPTES 14
||| |||||
Db 61 CNDEGLECVPTES 74

RESULT 14
US-09-574-708A-4
; Sequence 4, Application US/09574708A
; Patent No. 6475796
; GENERAL INFORMATION:
; APPLICANT: N. Stephen Pollitt
; APPLICANT: Judith A. Abraham
; TITLE OF INVENTION: Vascular endothelial growth factor
; TITLE OF INVENTION: variants
; FILE REFERENCE: SCIOS004A
; CURRENT APPLICATION NUMBER: US/09/574,708A
; CURRENT FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/135,312
; PRIOR FILING DATE: 1999-05-20
; NUMBER OF SEQ ID NOS: 11
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 145
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-574-708A-4

Query Match 75.6%; Score 59; DB 4; Length 145;

Best Local Similarity 78.6%; Pred. No. 0.046;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRECVPTES 14
DB 61 CNDEGLECVPTES 74

RESULT 15
US-09-037-983C-2
; Sequence 2, Application US/09037983C
; Patent No. 6583276
; GENERAL INFORMATION:
; APPLICANT: Newfeld, Gera
; APPLICANT: Keshet, Eli
; APPLICANT: Vlodavsky, Israel
; APPLICANT: Poltorak, Zoya
; TITLE OF INVENTION: Angiogenic Factor and Use Thereof in Treating Cardiovascular Disease
; FILE REFERENCE: 000274-00009
; CURRENT APPLICATION NUMBER: US/09/037,983C
; CURRENT FILING DATE: 1998-03-11
; PRIOR APPLICATION NUMBER: 60/025,537
; PRIOR FILING DATE: 1996-09-06
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO. 2
; LENGTH: 145
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-037-983C-2

Query Match 75.6%; Score: 59; DB 4; Length 145;
Best Local Similarity 78.6%; Pred. No. 0.046;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRECVPTES 14
DB 61 CNDEGLECVPTES 74

Search completed: July 24, 2003, 14:51:29
Job time : 17.9412 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:42:56 ; Search time 10.7059 Seconds
(without alignments)
125.759 Million cell updates/sec

Title: PEP1
Perfect score: 78
Sequence: 1 CNSEMRBCVPTES 14

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283308 seqs, 96168682 residues
Total number of hits satisfying chosen parameters: 283308

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_76:.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	59	75.6	232	A41551	vascular endotheli
2	57	73.1	120	A33787	vascular endotheli
3	57	73.1	133	B49530	ovine vascular end
4	57	73.1	146	S57956	vascular endotheli
5	57	73.1	190	B40080	vascular endotheli
6	56	71.8	190	B44881	glioma-derived vas
7	56	71.8	190	A35987	vascular endotheli
8	56	71.8	214	A44881	vascular endotheli
9	55	70.5	190	S52130	vascular endotheli
10	42	53.8	389	H82448	aminotransferase,
11	41	52.6	-276	E84373	hypothetical prote
12	40	51.3	1361	S50943	hypothetical prote
13	40	51.3	1436	S5290	protein-tyrosine-p
14	40	51.3	1548	S34583	serine proteinase
15	39.5	50.6	191	AB1800	hypothetical prote
16	39	50.0	217	T24867	hypothetical prote
17	39	50.0	657	A53545	protein p84 - huma
18	39	50.0	713	TE0230	NADPH-cytochrome p
19	39	50.0	1106	J04015	hypothetical prote
20	39	50.0	3507	T34513	hypothetical prote
21	38	48.7	138	TRHUB	thyrotropin beta c
22	38	48.7	138	TRBOB	thyrotropin beta c
23	38	48.7	138	TRPGB	thyrotropin beta c
24	38	48.7	249	T24604	hypothetical prote
25	38	48.7	300	T49748	hypothetical prote
26	38	48.7	448	C81718	signal recognition
27	38	48.7	459	B72361	conserved hypothet
28	38	48.7	559	C9HU	complement C9 prec
29	38	48.7	660	T38294	sec-7 cytohesin-li

ALIGNMENTS

RESULT 1

A41551
vascular endothelial growth factor 206 precursor - human
N:Alternate names: vascular permeability factor
N:Contains: vascular endothelial growth factor 121 (VEGF 121); VEGF 165; VEGF 189;
C:Species: Homo sapiens (man)
C>Date: 28-Aug-1992 #sequence_revision 28-Aug-1992 #text_change 05-Nov-1999
C:Accession: A41551; B41551; A40454; B40454; C40454; A40079; A40080; J0146;
R:Houck, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.
Mol. Endocrinol. 5, 1806-1814, 1991
A>Title: The vascular endothelial growth factor family: identification of a fourth
A:Reference number: A41551; MUID:92168017; PMID:1791831
A:Accession: A41551
A:Molecule type: mRNA
A:Residues: 1-232 <HOU1>
A:Cross-references: GB:S85192; NID:g246155; PID:g246156
A:Accession: C41551
A>Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-140, 'N', 183-232 <HOU2>
A:Accession: B41551
A>Status: nucleic acid sequence not shown, not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-141, 227-232 <HOU>
R:Tischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Gospodarowicz, D.; Fiddes, J.;
J. Biol. Chem. 266, 11947-11954, 1991
A>Title: The human gene for vascular endothelial growth factor. Multiple protein fr
A:Reference number: A40454; MUID:91268072; PMID:1711045
A:Accession: A40454
A:Molecule type: DNA
A:Residues: 1-165, 183-232 <T11>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M639;
A:Accession: B40454
A:Molecule type: DNA
A:Residues: 1-140, 'N', 183-232 <T12>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M639;
A:Accession: C40454
A:Molecule type: DNA
A:Residues: 1-141, 227-232 <T13>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M639;
R:Keck, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly,
Science 246, 1309-1312, 1989
A>Title: Vascular permeability factor, an endothelial cell mitogen related to PDGF
A:Reference number: A40079; MUID:90069609; PMID:2479987
A:Accession: A40079
A>Status: not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-165, 183-232 <KEC>
A:Cross-references: GB:M27281; NID:g340300; PIDN:AAA36807.1; PID:g340301
R:Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A>Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.

A:Reference number: A40080; MUID:90069608; PMID:2479986

A:Accession: A40080

A>Status: not compared with conceptual translation

A:Molecule type: mRNA

A:Residues: 1-140, 'N', 183-232 <LEU>

A:Cross-references: GB:M32977; NID:g181970; PIDN:AAA35789.1; PID:g181971

R:Weinhold, K.; Marme, D.; Welch, H.A.

Biochem. Biophys. Res. Commun. 183, 1167-1174, 1992

A:Title: AIDS-associated Kaposi's sarcoma cells in culture express vascular endothelial

A:Reference number: J01463; MUID:92231879; PMID:1567395

A:Accession: J01463

A:Molecule type: mRNA

A:Residues: 1-140, 'N', 183-232 <WEI>

A:Cross-references: EMBL:X62568; NID:g37658; PIDN:CAA44447.1; PID:g37659

A:Experimental source: AIDS-Kaposi's sarcoma cell

A:Accession: J01464

A:Molecule type: mRNA

A:Residues: 1-140, 'N', 227-232 <WE2>

A:Experimental source: AIDS-Kaposi's sarcoma cell

R:Connolly, D.T.; Olander, J.V.; Heuvelman, D.; Nelson, R.; Monsell, R.; Siegel, N.; Hay

J. Biol. Chem. 264, 20017-20024, 1989

A:Title: Human vascular permeability factor. Isolation from U937 cells.

A:Reference number: A34492; MUID:90062112; PMID:2584205

A:Accession: A34492

A:Molecule type: protein

A:Residues: 27-36; 43-49, 'R', 72-76, 'Q', 78-81; 59-71 <CON>

C:Comment: The most common of several alternatively spliced forms is VEGF 165.

C:Genetics:

A:Gene: GDB:VEGF

A:Cross-references: GDB:L32244; OMIM:192240

A:Map position: 6p21-6p12

C:Function:

A:Description: promotes fluid and protein leakage from blood vessels

C:Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; extracellular pr

F:1-232/Product: vascular endothelial growth factor 206 precursor #status predicted <V2Q

F:1-165,183-232/Product: vascular endothelial growth factor 189 precursor #status predic

F:1-141,221-232/Product: vascular endothelial growth factor 121 precursor #status predic

F:1-26/Domain: signal sequence #status predicted <SIG>

F:101/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 75.68; Score 59; DB 2; Length 232;

Best Local Similarity 78.68; Pred. No. 0.021;

Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRCEVPTEES 14

Db 87 CNDESLECVPTTES 100

RESULT 2

A33787

vascular endothelial growth factor (version 1) - bovine

C:Species: Bos primigenius taurus (cattle)

C:Date: 16-Mar-1990 #sequence-revision 16-Mar-1990 #text_change 05-Nov-1999

C:Accession: A33787

R:Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Crisp

Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989

A:Title: Vascular endothelial growth factor: a new member of the platelet-derived growth

A:Reference number: A33787; MUID:90121225; PMID:2610687

A:Accession: A33787

A>Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-120 <TIS>

A:Cross-references: GB:M33750; NID:g163810; PIDN:AAA30805.1; PID:g163811

C:Keywords: alternative splicing

Query Match 73.18; Score 57; DB 2; Length 120;

Best Local Similarity 76.98; Pred. No. 0.024;

Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRCEVPTEE 13

Db 60 CNDESLECVPTTEE 72

RESULT 3

B49530

vascular endothelial growth factor; homolog A2R, 14.7K - Orf virus

C:Species: Orf virus

C:Date: 07-Apr-1994 #sequence-revision 18-Nov-1994 #text_change 08-Oct-1999

C:Accession: B49530

R:Lytle, D.J.; Fraser, K.M.; Fleming, S.B.; Mercer, A.A.; Robinson, A.J.

J. Virol. 68, 84-92, 1994

A:Title: Homologs of vascular endothelial growth factor are encoded by the poxvirus

A:Reference number: A49530; MUID:94076465; PMID:8254780

A:Contents: N22

A:Accession: B49530

A>Status: preliminary

A:Molecule type: DNA

A:Residues: 1-133 <LYT>

A:Cross-references: GB:S67520; NID:g456897; PIDN:AAB29220.1; PID:g456899

A>Note: sequence inconsistent with nucleotide translation

A:Note: sequence extracted from NCBI backbone (NCBIN:141420, NCBIP:141425)

Query Match 73.18; Score 57; DB 2; Length 133;

Best Local Similarity 76.98; Pred. No. 0.027;

Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRCEVPTEE 13

Db 71 CNDESLECVPTTEE 83

RESULT 4

S57956

ovine vascular endothelial growth factor - sheep

C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)

C:Date: 13-Jan-1996 #sequence-revision 01-Mar-1996 #text_change 05-Nov-1999

C:Accession: S57956

R:Redmer, D.A.; Dai, Y.; Li, J.; Jones, S.C.; Moor, R.M.

submitted to the EMBL Data Library, July 1995

A:Reference number: S57956

A:Accession: S57956

A>Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-146 <RED>

A:Cross-references: EMBL:X89506; NID:g899350; PIDN:CAA61677.1; PID:g899351

Query Match 73.18; Score 57; DB 2; Length 146;

Best Local Similarity 76.98; Pred. No. 0.029;

Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRCEVPTEE 13

Db 86 CNDESLECVPTTEE 98

RESULT 5

B40080

vascular endothelial growth factor precursor (version 2) - bovine

C:Species: Bos primigenius taurus (cattle)

C:Date: 30-Jun-1992 #sequence-revision 30-Jun-1992 #text_change 05-Nov-1999

C:Accession: B40080; B33787; A33255

R:Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.

Science 246, 1306-1309, 1989

A:Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.

A:Reference number: A40080; MUID:90069608; PMID:2479986

A:Accession: B40080

A:Molecule type: mRNA

A:Residues: 1-190 <LEU>

A:Cross-references: GB:M32976; NID:g163006; PIDN:AAA30502.1; PID:g163007

R:Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Cr

Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989

A:Title: Vascular endothelial growth factor: a new member of the platelet-derived grc

A:Reference number: A33787; MUID:90121225; PMID:2610687

A:Accession: B33787

A:Molecule type: mRNA

A:Residues: 27-190 <RIS>

A:Cross-references: GB:M31836; MID:g163808; PIDN:AAA30804.1; PID:g163809

R:Ferrara, N.; Henzel, W.J.

Biochem. Biophys. Res. Commun. 161, 851-858, 1989

A:Title: Placental follicular cells secrete a novel heparin-binding growth factor specific

A:Reference number: A33255; MUID:89286596; PMID:2735925

A:Accession: A33255

A:Molecule type: protein

A:Residues: 27-31 <FER>

C:Keywords: alternative splicing; glycoprotein

F:1-26/Domain: signal sequence #status predicted <SIG>

F:27-190/Product: vascular endothelial growth factor #status predicted <MAT>

F:100/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 73.1%; Score 57; DB 2; Length 190;

Best Local Similarity 76.9%; Pred. No. 0.037; Mismatches 0; Indels 3; Gaps 0;

Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CENSEMRECVPTPEE 13

DB 86 CNDESLCVPTEE 98

RESULT 6

B44881

vascular endothelial growth factor-1 precursor - mouse

C:Species: Mus musculus (house mouse)

C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 05-Nov-1999

C:Accession: B44881; A43351; A61029

R:Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.

Development 114, 521-532, 1992

A:Title: Expression of vascular endothelial growth factor during embryonic angiogenesis

A:Reference number: A44881; MUID:92274860; PMID:1592003

A:Accession: B44881

A:Molecule type: mRNA

A:Residues: 1-190 <BRE>

A:Cross-references: GB:S38083; MID:g249858; PIDN:AAB22253.1; PID:g249859

A:Experimental source: embryo

A:Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBIP:107623)

R:Claffey, K.P.; Wilkison, W.O.; Spiegelman, B.M.

J. Biol. Chem. 267, 16317-16322, 1992

A:Title: Vascular endothelial growth factor. Regulation by cell differentiation and acti

A:Reference number: A43351; MUID:92355593; PMID:1644816

A:Accession: A43351

A:Molecule type: mRNA

A:Residues: 1-116, ER, 119-190 <CLA>

A:Cross-references: GB:M95200; MID:g202350; PIDN:AAA40547.1; PID:g202351

A:Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBIP:110675)

R:Rosenthal, R.A.; Megyesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.

Growth Factors 4, 53-59, 1990

A:Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelial g

A:Reference number: A61029; MUID:91197543; PMID:2085441

A:Accession: A61029

A:Molecule type: protein

A:Residues: 27-38 <ROS>

C:Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein; mit

Query Match

Best Local Similarity 71.4%; Score 56; DB 2; Length 190;

Matches 10; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 CENSEMRECVPTPEES 14

DB 86 CNDEALECVPPTSES 99

RESULT 7

A35987

glioma-derived vascular endothelial cell growth factor - rat

C:Species: Rattus norvegicus (Norway rat)

C:Date: 16-Nov-1990 #sequence_revision 16-Nov-1990 #text_change 05-Nov-1999

C:Accession: A35987

R:Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990

A:Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that

A:Reference number: A35987; MUID:90207249; PMID:2320579

A:Accession: A35987

A:Status: Preliminary

A:Molecule type: mRNA

A:Residues: 1-190 <CON>

A:Cross-references: GB:M32167; MID:g204287; PIDN:AAA41211.1; PID:g204288

Query Match 71.8%; Score 56; DB 2; Length 190;

Best Local Similarity 71.4%; Pred. No. 0.054; Mismatches 0; Indels 4; Gaps 0;

Matches 10; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 CENSEMRECVPTPEES 14

DB 86 CNDEALECVPPTSES 99

RESULT 8

A44881

vascular endothelial growth factor-3 precursor - mouse

N:Contains: vascular endothelial growth factor-2; vascular permeability factor

C:Species: Mus musculus (house mouse)

C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 08-Oct-1999

C:Accession: A44881; C44881; A60932; S52136

R:Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.

Development 114, 521-532, 1992

A:Title: Expression of vascular endothelial growth factor during embryonic angioge

A:Reference number: A44881; MUID:92274860; PMID:1592003

A:Accession: A44881

A:Molecule type: mRNA

A:Residues: 1-214 <BRE>

A:Cross-references: GB:S37052; MID:g249856; PIDN:AAB22252.1; PID:g249857

A:Experimental source: embryo

A:Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIP:104678)

A:Accession: C44881

A:Molecule type: mRNA

A:Residues: 1-140, 209-214 <BR2>

A:Cross-references: GB:S38100; MID:g249860; PIDN:AAB22254.1; PID:g249861

A:Note: sequence extracted from NCBI backbone (NCBIN:107624, NCBIP:107625)

R:Clauss, M.; Gerlach, M.; Gerlach, H.; Brett, J.; Wang, F.; Familletti, P.C.; Pan,

J. Exp. Med. 172, 1535-1545, 1990

A:Title: Vascular permeability factor: a tumor-derived polypeptide that induces en

A:Reference number: A60932; MUID:91079755; PMID:2258694

A:Accession: A60932

A:Molecule type: protein

A:Residues: 27-33 <CLA>

R:Sugihara, T.; Kaul, S.C.; Mitsui, Y.; Wadhwa, R.

Biochim. Biophys. Acta 1224, 365-370, 1994

A:Title: Enhanced expression of multiple forms of VEGF is associated with spontan

A:Reference number: S52136; MUID:95101726; PMID:7803491

A:Accession: S52136

A:Status: preliminary

A:Molecule type: protein

A:Residues: 27-46 <SUG>

C:Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.

C:Keywords: alternative splicing; angiogenesis; disulfide bond; glycoprotein; homox

F:1-26/Domain: signal sequence #status predicted <SIG>

F:27-214/Product: vascular endothelial growth factor-3 #status experimental <MAT>

Query Match 71.8%; Score 56; DB 2; Length 214;

Best Local Similarity 71.4%; Pred. No. 0.06; Mismatches 0; Indels 4; Gaps 0;

Matches 10; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 CENSEMRECVPTPEES 14

DB 86 CNDEALECVPPTSES 99

RESULT 9

S52130

vascular endothelial growth factor - pig

C:Species: Sus scrofa domestica (domestic pig)
 C:Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 05-Nov-1999
 C:Accession: S52130
 R:Sharma, H.S.; Tang, Z.H.; Gho, B.C.G.; Verdouw, P.D.
 Biochim. Biophys. Acta 1260, 235-238, 1995
 A:Title: Nucleotide sequence and expression of the porcine vascular endothelial growth factor
 A:Reference number: S52130; MUID:95143284; PMID:7841203.
 A:Accession: S52130
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-190 <SHA>
 A:Cross-references: GB:X81380; NID:g587559; PIDN:CAA57143.1; PID:g587560

Query Match 70.58; Score 55; DB 2; Length 190;
 Best Local Similarity 76.98; Pred. No. 0.079;
 Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CNSEMRCPVTEE 13

DB 86 CNDEGLECVPTTE 98

RESULT 10

H82448
 aminotransferase, class II VCA0523 [imported] - Vibrio cholerae (strain N16961 serogroup O1)
 C:Species: Vibrio cholerae
 C:Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
 C:Accession: H82448
 R:Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R.J.; Church, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragoi, I.; Sellers, J.; R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M.
 Nature 406, 477-483, 2000
 A:Title: DNA Sequence of both chromosomes of the cholera pathogen Vibrio cholerae.
 A:Reference number: A82035; MUID:20406833; PMID:10952301
 A:Accession: H82448
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-389 <HEI>
 A:Cross-references: GB:AF004383; GB:AE003853; NID:g9657927; PIDN:AAF96436.1; GSPDB:GN001
 A:Experimental source: serogroup O1; strain N16961; biotype El Tor
 C:Genetics:
 A:Gene: VCA0523
 A:Map position: 2

Query Match 53.88; Score 42; DB 2; Length 389;
 Best Local Similarity 60.08; Pred. No. 21;
 Matches 6; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

OY 1 CNSEMRCPV 10

DB 247 CNNEVNRCPV 256

RESULT 11

E84373
 hypothetical protein Vng2230h [imported] Halobacterium sp. NRC-1
 C:Species: Halobacterium sp. NRC-1
 C:Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
 C:Accession: E84373
 R:Ng, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.; Lasky, S.; Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G.; Jablon, J.; Alam, M.; Freitas, T.
 Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
 A:Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, T.M.; Li
 A:Title: Genome sequence of Halobacterium species NRC-1.
 A:Reference number: A84160; MUID:20504483; PMID:11016950
 A:Accession: E84373
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-276 <SPO>
 A:Cross-references: GB:AE004437; NID:g10581644; PIDN:AAG20353.1; GSPDB:GN00138
 C:Genetics:
 A:Gene: VNG2230H

Query Match 52.68; Score 41; DB 2; Length 276;
 Best Local Similarity 58.38; Pred. No. 23;
 Matches 7; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

OY 3 SEMRECVPTTES 14

DB 34 SELRECVVDQDS 45

RESULT 12

S50943
 hypothetical protein YML049c - yeast (Saccharomyces cerevisiae)
 A:Alternate names: hypothetical protein YM9827.03c
 C:Species: Saccharomyces cerevisiae
 C:Date: 10-Feb-1995 #sequence_revision 12-May-1995 #text_change 29-Oct-1999
 C:Accession: S50943
 R:Odell, C.; Bowman, S.
 submitted to the EMBL Data Library, January 1995
 A:Reference number: S50941
 A:Accession: S50943
 A:Molecule type: DNA
 A:Residues: 1-1361 <ODE>
 A:Cross-references: EMBL:247816; NID:g642303; PIDN:CAA87825.1; PID:g642306; MIPS:YML
 C:Genetics:
 A:Gene: SGD:RSE1
 A:Cross-references: SGD:S0004513; MIPS:YML049c
 A:Map position: 13L

Query Match 51.38; Score 40; DB 2; Length 1361;
 Best Local Similarity 50.08; Pred. No. 1.4e+02;
 Matches 7; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

OY 1 CNSEMRCPVPTTES 14

DB 603 CTAEHRHIVPTGKS 616

RESULT 13

JC5290
 protein-tyrosine-phosphatase (EC 3.1.3.48) - human
 A:Alternate names: Phosphotyrosine phosphatase
 C:Species: Homo sapiens (man)
 C:Date: 16-Apr-1997 #sequence_revision 09-May-1997 #text_change 21-Jan-2000
 C:Accession: JC5290
 R:Wang, B.; Kishihara, K.; Zhang, D.; Hara, H.; Nomoto, K.
 Biochem. Biophys. Res. Commun. 231, 77-81, 1997
 A:Title: Molecular cloning and characterization of a novel human receptor protein tyrosine phosphatase.
 A:Reference number: JC5290; MUID:97223402; PMID:9070223
 A:Accession: JC5290
 A:Molecule type: mRNA
 A:Residues: 1-1436 <WAN>
 A:Cross-references: GB:U73727; NID:g1923222; PIDN:AAB51343.1; PID:g1923223
 C:Comment: This enzyme belongs to type II receptor protein tyrosine phosphatase which and an immunoglobulin-like domains.
 C:Genetics:
 A:Gene: hppp-J

C:Superfamily: protein-tyrosine-phosphatase, receptor type mu; fibronectin type III r
 -tyrosine-phosphatase homology
 C:Keywords: phosphoprotein; phosphoric monoester hydrolase; tyrosine-specific phosphatase
 F:22-188/Domain: MAM homology <NAN>
 F:203-266/Domain: immunoglobulin homology <IMM>
 F:288-366/Domain: fibronectin type III repeat homology <3RR>
 F:826-1436/Domain: leukocyte common antigen cytosolic domain homology <LAC>
 F:903-1123/Domain: protein-tyrosine-phosphatase homology <PTP1>
 F:1193-1418/Domain: protein-tyrosine-phosphatase homology <PTP2>
 F:1075/Active site: Cys (phosphocysteine intermediate) #status Predicted
 F:1081/Binding site: substrate phosphate (Arg) #status Predicted
 F:1370/Active site: Cys (phosphocysteine intermediate) #status Predicted
 F:1376/Binding site: substrate phosphate (Arg) #status Predicted

Query Match 51.38; Score 40; DB 2; Length 1436;

Best Local Similarity 58.3%; Pred. No. 1.5e+02; Mismatches 2; Indels 0; Gaps 0;
Matches 7; Conservative 3;

QY 2 NSEMRECVPTTE 13
Db 432 NOTIRECVKTEQ 443

RESULT 14

S34583
serine proteinase (EC 3.4.21.-) PC68 - mouse
C:Species: Mus musculus (house mouse)
C:Date: 02-Dec-1993 #sequence_revision 10-Nov-1995 #text_change 05-Nov-1999
C:Accession: S34583
R:Nakagawa, T.; Murakami, K.; Nakayama, K.
FEBS Lett. 327, 165-171, 1993
A:Title: Identification of an isoform with an extremely large Cys-rich region of PC6, a
A:Reference number: S34583; MUID:93327934; PMID:8335106
A:Accession: S34583
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-1548 <NAK>
A:Cross-references: GB:DL17583; NID:9407344; PIDN:BA04507.1; PID:dl005033; PID:g440374
C:Keywords: hydrolase; serine proteinase

Query Match 51.3%; Score 40; DB 2; Length 1548;

Best Local Similarity 58.3%; Pred. No. 1.6e+02; Mismatches 2; Indels 0; Gaps 0;
Matches 7; Conservative 3;

QY 2 NSEMRECVPTTE 13
Db 702 DSEYECMPCEE 713

RESULT 15

AB1800
hypothetical protein lin2945 [imported] - Listeria innocua (strain Clip11262)
C:Species: Listeria innocua
C:Date: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 27-Nov-2001
C:Accession: AB1800
R:Glaser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Bloeker
.; Dominguez-Bernal, G.; Duchaud, E.; Durand, L.; Dussurget, O.; Entian, K.D.; Fsihl, H.
D.; Jones, L.M.; Karst, U.
Science 294, 849-852, 2001
A:Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitournam, A.; Ma
ok C.; Schlueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wehland,
A:Title: Comparative genomics of Listeria species.
A:Reference number: AB1077; MUID:21537279; PMID:11679669
A:Accession: AB1800
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-191 <GLA>
A:Cross-references: GB:AL592022; PIDN:CAC98170.1; PID:g16415486; GSPDB:GN00178
A:Experimental source: strain Clip11262
C:Genetics:
A:Gene: lin2945

Query Match 50.6%; Score 39.5; DB 2; Length 191;

Best Local Similarity 52.9%; Pred. No. 29; Mismatches 2; Indels 3; Gaps 1;
Matches 9; Conservative 3;

QY 1 CNSEMRFE--CVPTTEES 14
Db 50 CNAEYAEINLCVNTTEA 66

Search completed: July 24, 2003, 14:50:48
Job time : 11.7059 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:08:59 ; Search time 10.7059 seconds
(without alignments)
61.496 Million cell updates/sec

Title: PEPL
Perfect score: 78
Sequence: 1 CENSEMRECVPTES 14

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 127863 seqs, 47026705 residues

Total number of hits satisfying chosen parameters: 127863

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_41.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Query	Score	Match	Length	ID	Description
1	59	75.6	232	1	VEGA_HUMAN	P15692 homo sapien
2	57	73.1	133	1	VEGH_ORFN2	P52584 orf virus (
3	57	73.1	146	1	VEGA_SHEEP	P50412 ovis aries
4	57	73.1	164	1	VEGA_CAVPO	P26617 cavia porce
5	57	73.1	190	1	VEGA_BOVIN	P15691 bos taurus
6	56	71.8	214	1	VEGA_MOUSE	Q00731 mus musculu
7	56	71.8	214	1	VEGA_RAT	P16612 rattus norv
8	55	70.5	190	1	VEGA_PIG	P49151 sus scrofa
9	55	70.5	214	1	VEGA_CANFA	Q9myv3 canis famil
10	51	65.4	190	1	VEGA_MESAU	Q99psl mesocricetu
11	49	62.8	190	1	VEGA_HORSE	Q9qkro equus cabal
12	40	51.3	1361	1	YME9_YEAST	Q04693 saccharomyc
13	40	51.3	1430	1	PPPU_HUMAN	Q92729 homo sapien
14	40	51.3	1877	1	PKCS_MOUSE	Q04592 mus musculu
15	38	48.7	138	1	TSHB_BOVIN	P01223 bos taurus
16	38	48.7	138	1	TSHB_HORSE	Q28376 equus cabal
17	38	48.7	138	1	TSHB_HUMAN	P01222 homo sapien
18	38	48.7	138	1	TSHB_LAMGL	P79357 lama glama
19	38	48.7	138	1	TSHB_PIG	P01224 sus scrofa
20	38	48.7	547	1	C09_HORSE	P48770 equus cabal
21	38	48.7	559	1	C09_HUMAN	P02748 homo sapien
22	38	48.7	714	1	NCPR_CATRO	Q05001 catharanthu
23	38	48.7	756	1	EFER_HUMAN	Q75154 homo sapien
24	38	48.7	1082	1	SC73_SCHPO	O13817 schizosacch
25	37	47.4	149	1	PLGF_BOVIN	Q9xs47 bos taurus
26	37	47.4	197	1	HAN1_XENLA	O73615 xenopus lae
27	37	47.4	202	1	HAN1_CHICK	Q90691 gallus gall
28	37	47.4	204	1	HAN1_SHEEP	Q28555 ovis aries
29	37	47.4	208	1	HAN2_BRARE	P57102 brachydanio
30	37	47.4	210	1	HAN2_XENLA	P57101 xenopus lae
31	37	47.4	215	1	HAN1_HUMAN	O96004 homo sapien
32	37	47.4	215	1	HAN1_RABIT	P57100 oryctolagus
33	37	47.4	216	1	HAN1_MOUSE	Q64279 m heart- an

34	37	47.4	216	1	HAN1_RAT	P97832 rattus norv
35	37	47.4	216	1	HAN2_CHICK	Q90690 gallus gall
36	37	47.4	217	1	HAN2_HUMAN	O95300 homo sapien
37	37	47.4	217	1	HAN2_MOUSE	Q61039 m heart- an
38	37	47.4	413	1	MOCK_ACICA	P94131 acinetobact
39	37	47.4	419	1	VEGC_HUMAN	P49767 homo sapien
40	37	47.4	457	1	BAG4_HUMAN	O95429 homo sapien
41	37	47.4	553	1	C301_DROME	Q9V6D6 drosophila
42	37	47.4	571	1	D1SJ_BOTJA	P30431 bothrops ja
43	37	47.4	793	1	NETB_DROME	Q24568 drosophila
44	37	47.4	1191	1	LMG2_MOUSE	Q61092 mus musculu
45	36.5	46.8	271	1	TNR4_RAT	P15725 rattus norv

ALIGNMENTS

RESULT 1

VEGA_HUMAN	STANDARD:	PRT: 232 AA.
AC P15692; O60720; O75875; Q16889; Q96NW5; Q9H1W8; Q9H1W9; Q9UH58; Q9UL23;		
DT 01-APR-1990 (Rel. 14, Created)		
DT 28-FEB-2003 (Rel. 41, Last sequence update)		
DT 15-SEP-2003 (Rel. 42, Last annotation update)		
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).		
DE permeability factor) (VPF).		
GN VEGF OR VEGFA.		
OS Homo sapiens (Human).		
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Euthera; Primates; Catarrhini; Hominidae; Homo.		
OX NCBI_TaxID=9606;		
RN [1]		
RP SEQUENCE FROM N.A. (ISOFORM VEGF189 AND VEGF165).		
RX MEDLINE=90069608; PubMed=2479986;		
RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;		
RT "Vascular endothelial growth factor is a secreted angiogenic mitogen.";		
RL Science 246:1306-1309(1989)		
RN [2]		
RP SEQUENCE FROM N.A. (ISOFORM VEGF189), AND PARTIAL SEQUENCE.		
RX MEDLINE=90069609; PubMed=2479987;		
RA Keck P.J., Hauser S.D., Krivi G., Sanzo K., Warren T., Feder J., Connolly D.T.;		
RT "Vascular permeability factor, an endothelial cell mitogen related to PDGF.";		
RL Science 246:1309-1312(1989)		
RN [3]		
RP SEQUENCE FROM N.A. (ISOFORM VEGF189).		
RX MEDLINE=91268072; PubMed=1711045;		
RA Tischer E., Mitchell R., Hartman T., Silva M., Gospodarowicz D., Fiddes J.C., Abraham J.A.;		
RT "The human gene for vascular endothelial growth factor. Multiple protein forms are encoded through alternative exon splicing.";		
RL J. Biol. Chem. 266:11947-11954(1991)		
RN [4]		
RP SEQUENCE FROM N.A. (ISOFORM VEGF206).		
RX MEDLINE=92168017; PubMed=1791831;		
RA Houck K.A., Ferrara N., Winer J., Cachianes G., Li B., Leung D.W.;		
RT "The vascular endothelial growth factor family: identification of a fourth molecular species and characterization of alternative splicing of RNA.";		
RL Mol. Endocrinol. 5:1806-1814(1991)		
RN [5]		
RP SEQUENCE FROM N.A. (ISOFORM VEGF165).		
RX MEDLINE=92231879; PubMed=1567395;		
RA Weindel K., Marme D., Weich H.A.;		
RT "AIDS-associated Kaposi's sarcoma cells in culture express vascular endothelial growth factor.";		
RL Biochem. Biophys. Res. Commun. 183:1167-1174(1992)		
RN [6]		
RP SEQUENCE FROM N.A. (ISOFORM VEGF145).		
RX MEDLINE=97207275; PubMed=9054410;		

RA Poltorak Z., Cohen T., Sivan R., Kandelis Y., Spira G., Vlodavsky I.,
 RA Keshet E., Neufeld G.;
 RT "VEGF145, a secreted vascular endothelial growth factor isoform that
 RT binds to extracellular matrix.";
 RL J. Biol. Chem. 272:7151-7158(1997).
 RN [7]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF183).
 RC TISSUE-Kidney;
 RA Lei J., Jiang A., Pei D.;
 RA MEDLINE-99096474; PubMed-9878851;
 RT "Identification and characterization of a new splicing variant of
 RT vascular endothelial growth factor: VEGF183.";
 RL Biochim. Biophys. Acta 1443:400-406(1998).
 RN [8]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF165).
 RC TISSUE-Breast;
 RA Claffey K.P., Shih S.-C., Mullen A., Dziennis S., Cusick J.L.,
 RA Abrams K.R., Lee S.W., Decmar M.;
 RT "Identification of a human VPF/VEGF 3' untranslated region mediating
 RT hypoxia-induced mRNA stability.";
 RL Mol. Biol. Cell 9:469-481(1998).
 RN [9]
 RP SEQUENCE OF 114-209 FROM N.A. (ISOFORM VEGF183).
 RC TISSUE-Retina;
 RA MEDLINE-99165303; PubMed-10067980;
 RT Jingling L., Xue Y., Agarwal N., Roque R.S.;
 RT "Human Muller cells express VEGF183, a novel spliced variant of
 RT vascular endothelial growth factor.";
 RL Invest. Ophthalmol. Vis. Sci. 40:752-759(1999).
 RN [10]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF165).
 RC TISSUE-Hemangioidendelioma;
 RA Murata H., Fukushima J., Hattori S., Okuda K., Yanagi H.;
 RT "Human cDNA for the vascular endothelial growth factor isoform
 RT VEGF165.";
 RL Submitted (DEC-1998) to the EMBL/GenBank/DBJ databases.
 RN [11]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF148).
 RC TISSUE-Renal glomerulus;
 RA MEDLINE-99394945; PubMed-10464055;
 RT Whittle C.J., Gillespie K.M., Harrison R., Mathieson P.W.,
 RT Harper S.J.;
 RT "Heterogeneous vascular endothelial growth factor (VEGF) isoform mRNA
 RT and receptor mRNA expression in human glomeruli, and the
 RT identification of VEGF148 mRNA, a novel truncated splice variant.";
 RL Clin. Sci. 97:303-312(1999).
 RN [12]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF121).
 RC Sato J.D., Whitney R.G.;
 RT "Human cDNA for vascular endothelial growth factor isoform VEGF121.";
 RL Submitted (DEC-1999) to the EMBL/GenBank/DBJ databases.
 RN [13]
 RP SEQUENCE FROM N.A.
 RC Williams S.;
 RA Submitted (DEC-2000) to the EMBL/GenBank/DBJ databases.
 RN [14]
 RP SEQUENCE OF 23-232 FROM N.A. (VEGF165).
 RA Rieder M.J., Arnel T.Z., Carrington D.P., Chung M.-W., Lee K.L.,
 RA Poel C.L., Oth E.J., Yi Q., Nickerson D.A.;
 RL Submitted (Oct-2001) to the EMBL/GenBank/DBJ databases.
 RN [15]
 RP PRELIMINARY SEQUENCE OF 27-36; 43-50 AND 59-81.
 RA MEDLINE-90062112; PubMed-2584205;
 RA Connolly D.T., Olander J.V., Heuvelman D., Nelson R., Monsell R.,
 RA Siegel N., Haymore B.L., Leimgruber R., Feder J.;
 RT "Human vascular permeability factor: Isolation from U937 cells.";
 RL J. Biol. Chem. 264:20017-20024(1989).
 RN [16]
 RP SEQUENCE OF 27-41.
 RA MEDLINE-93145946; PubMed-7678805;
 RA Fiebig B.L., Jaeger B., Schoellmann C., Weindel K., Wiltling J.,
 RA Kochs G., Marme D., Hug H., Weich H.A.;

RT "Synthesis and assembly of functionally active human vascular
 RT endothelial growth factor homodimers in insect cells.";
 RL Eur. J. Biochem. 211:19-26(1993).
 RN [17]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.
 RA MEDLINE-97352774; PubMed-9207067;
 RA Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,
 RA de Vos A.M.;
 RT "Vascular endothelial growth factor: crystal structure and functional
 RT mapping of the kinase domain receptor binding site.";
 RL Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).
 RN [18]
 RP X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.
 RA MEDLINE-98035455; PubMed-9351807;
 RA Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;
 RT "The crystal structure of vascular endothelial growth factor (VEGF)
 RT refined to 1.93-A resolution: multiple copy flexibility and receptor
 RT binding.";
 RL Structure 5:1325-1338(1997).
 RN [19]
 RP X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 39-134.
 RA MEDLINE-99119204; PubMed-9922142;
 RA Wiesmann C., Christinger H.W., Cochran A.G., Cunningham B.C.,
 RA Fairbrother W.J., Keenan C.J., Meng G., de Vos A.M.;
 RT "Crystal structure of the complex between VEGF and a receptor-blocking
 RT peptide.";
 RL Biochemistry 37:17765-17772(1998).
 RN [20]
 RP STRUCTURE BY NMR OF 34-135.
 RA MEDLINE-97477915; PubMed-9336848;
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
 RA Starovasnik M.A.;
 RT "1H, 13C, and 15N backbone assignment and secondary structure of the
 RT receptor-binding domain of vascular endothelial growth factor.";
 RL Protein Sci. 6:2250-2260(1997).
 RN [21]
 RP STRUCTURE BY NMR OF 137-215.
 RA MEDLINE-98298440; PubMed-9634701;
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
 RA Starovasnik M.A.;
 RT "Solution structure of the heparin-binding domain of vascular
 RT endothelial growth factor.";
 RL Structure 6:637-648(1998).
 RN [22]
 RP MEDLINE-21320570; PubMed-11427521;
 RA Murphy J.F., Fitzgerald D.J.;
 RT "Vascular endothelial growth factor induces cyclooxygenase-dependent
 RT proliferation of endothelial cells via the VEGF-2 receptor.";
 RL FASEB J. 15:1667-1669(2001).
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 CC endothelial cell growth. It induces endothelial cell
 CC proliferation, promotes cell migration, inhibits apoptosis, and
 CC induces permeabilization of blood vessels. It binds to the
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 CC heparin. Neuropilin-1 binds isoforms VEGF-165 and VEGF-145.
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 CC with PLGF (By similarity).
 CC -!- SUBCELLULAR LOCATION: VEGF121 is acidic and freely secreted.
 CC VEGF165 is more basic, has heparin-binding properties and,
 CC although a significant proportion remains cell-associated, most is
 CC freely secreted. VEGF189 is very basic; it is cell-associated
 CC after secretion and is bound avidly by heparin and the
 CC extracellular matrix, although it may be released as a soluble
 CC form by heparin, heparinase or plasmin.
 CC -!- ALTERNATIVE PRODUCTS:
 CC Event=Alternative splicing; Named isoforms=7;
 CC Comment=Experimental confirmation may be lacking for some
 CC isoforms;
 CC Name=VEGF206;
 CC IsoId=P15692-1; Sequence=Displayed;
 CC Name=VEGF189;
 CC IsoId=P15692-2; Sequence=VSP_004622;

Query Match 75.6%; Score 59; DB 1; Length 232;
 Best Local Similarity 78.6%; Pred. No. 0.0073; 3; Indels 0; Gaps 0;
 Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPTEES 14
 || | |||||
 DB 87 CNDEGECVPTTEES 100

RESULT 2

VEGH_ORFN2 STANDARD; PRT; 133 AA.
 AC P52584;
 DT 01-OCT-1996 (Rel. 34, Created)
 DT 01-OCT-1996 (Rel. 34, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Vascular endothelial growth factor homologue precursor.
 GN A2R.

OS Orf virus (strain NZ2) (OV NZ-2).
 OC Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
 OC Parapoxvirus.
 OX NCBI_TaxID=10259;
 RN [1]

SEQUENCE FROM N.A.
 RX MEDLINE=94076465; PubMed=8254780;
 RA Lytle D.J., Fraser K.M., Fleming S.B., Mercer A.A., Robinson A.J.;
 RT "Homologs of vascular endothelial growth factor are encoded by the
 RT poxvirus orf virus".
 RL J. Virol. 68:84-92(1994).

CC -!- FUNCTION: INDUCES ENDOTHELIAL PROLIFERATION.
 CC -!- SUBUNIT: Homodimer; disulfide-linked (By similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announcement/>
 CC or send an email to license@isb-sib.ch).

CC EMBL; S67520; AAB29220.2; -
 CC HSSP; P15692; 1VPP.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF_1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 KW Mitogen; Growth factor; Glycoprotein; Signal.
 FT SIGNAL 1 20
 FT CHAIN 21 133
 FT DISULFID 36 78
 FT DISULFID 67 112
 FT DISULFID 71 114
 FT DISULFID 61 61
 FT DISULFID 70 70
 FT CARBOHYD 85 85
 SQ SEQUENCE 133 AA; 14715 MW; 917C0F6883030C39 CRC64;

Query Match 73.1%; Score 57; DB 1; Length 133;
 Best Local Similarity 76.9%; Pred. No. 0.0091; 3; Indels 0; Gaps 0;
 Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPTEES 13
 || | |||||
 DB 71 CNDEGECVPTTEES 83

RESULT 3

VEGA_SHEEP STANDARD; PRT; 164 AA.

VEGA_SHEEP STANDARD; PRT; 146 AA.
 AC P50412;
 DT 01-OCT-1996 (Rel. 34, Created)
 DT 01-OCT-1996 (Rel. 34, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
 GN VEGF OR VEGFA.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]

SEQUENCE FROM N.A.
 RP TISSUE=Kidney.
 RX MEDLINE=97117958; PubMed=8958842;
 RA Redmer D.A., Dai Y., Li J., Charnock-Jones D.S., Smith S.K.,
 RA Reynolds L.P., Moor R.M.;
 RT "Characterization and expression of vascular endothelial growth
 RT factor (VEGF) in the ovine corpus luteum".
 RL J. Reprod. Fertil. 108:157-165(1996).

CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 CC endothelial cell growth. It induces endothelial cell
 CC proliferation, promotes cell migration, inhibits apoptosis, and
 CC induces permeabilization of blood vessels. It binds to the
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 CC heparin (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 CC with PlGF (By similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announcement/>
 CC or send an email to license@isb-sib.ch).

CC EMBL; X89506; CAA61677.1;
 CC PIR; S57956; S57956.
 DR HSSP; P15692; 1VPP.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal.
 KW Heparin-binding; Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 146
 FT DISULFID 51 93
 FT DISULFID 82 127
 FT DISULFID 86 129
 FT DISULFID 76 76
 FT DISULFID 85 85
 FT CARBOHYD 100 100
 SQ SEQUENCE 146 AA; 17247 MW; 4E792CB557F91760 CRC64;

Query Match 73.1%; Score 57; DB 1; Length 146;
 Best Local Similarity 76.9%; Pred. No. 0.01;
 Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPTEES 13
 || | |||||
 DB 86 CNDEGECVPTTEES 98

RESULT 4

VEGA_CAVPO STANDARD; PRT; 164 AA.

P26617;
 01-AUG-1992 (Rel. 23, Created)
 01-AUG-1992 (Rel. 23, Last sequence update)
 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A (VEGF-A) (Vascular permeability factor) (VPF)
 GN VEGF OR VEGFA.
 OS Cavia porcellus (Guinea pig).
 CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
 OX NCBI_TaxID=10141;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=BILE duct;
 RA Berse B.;
 RL Submitted (JAN-1992) to the EMBL/GenBank/DBJ databases.
 CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial cell growth. Induces endothelial proliferation and vascular permeability (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PLGF (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch> or send an email to license@isb-sib.ch).
 CC -----
 DR HSP; M4230; AAA37057.1;
 DR EMBL; P15692; LVGH.
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam: PF00341; PDGF; 1.
 DR ProDom: PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR Mitogen: Angiogenesis; Growth factor; Glycoprotein.
 FT DISULFID 25 67 BY SIMILARITY.
 FT DISULFID 56 101 BY SIMILARITY.
 FT DISULFID 60 103 BY SIMILARITY.
 FT DISULFID 50 50 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 59 59 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 74 74 N-LINKED (GLCNAC...) (POTENTIAL).
 SQ SEQUENCE 164 AA; 19330 MW; 9EB86A81A9D5DC4 CRC64;
 Query Match 73.1%; Score 57; DB 1; Length 164;
 Best Local Similarity 76.9%; Pred. No. 0.011;
 Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;
 QY 1 CENSEMRECVPTPEE 13
 DB 60 CNDESLECVPTPEE 72
 RESULT 5
 VEGA_BOVIN
 ID VEGA_BOVIN STANDARD; PRT; 190 AA.
 AC P15691;
 DT 01-APR-1990 (Rel. 14, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF)
 GN VEGF OR VEGFA.
 OS Bos taurus (Bovine).
 CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;

CC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RP SEQUENCE FROM N.A., AND SEQUENCE OF 27-47.
 RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
 RT "Vascular endothelial growth factor is a secreted angiogenic mitogen";
 RL Science 246:1306-1309(1989).
 RN [2]
 RP SEQUENCE OF 27-190 FROM N.A. (ISOFORMS ALPHA AND BETA).
 RA Fischer E., Gospodarowicz D., Mitchell R., Silva M., Schilling J.,
 RA Lau K., Crisp T., Fiddes J.C., Abraham J.A.;
 RT "Vascular endothelial growth factor: a new member of the platelet-derived growth factor gene family";
 RL Biochem. Biophys. Res. Commun. 165:1198-1206(1989).
 RN [3]
 RP SEQUENCE OF 27-31.
 RA Ferrara N., Henzel W.J.;
 RT "Pituitary follicular cells secrete a novel heparin-binding growth factor specific for vascular endothelial cells";
 RL Biochem. Biophys. Res. Commun. 161:851-858(1989).
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PLGF (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
 CC -!- ALTERNATIVE PRODUCTS:
 CC Event-Alternative splicing; Named isoforms=2;
 CC Name=Alpha;
 CC IsoId=PI5691-1; Sequence=Displayed;
 CC Name=Beta;
 CC IsoId=PI5691-2; Sequence=VSP_004613, VSP_004614.
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch> or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL; M32976; AAA30502.1;
 DR EMBL; M31836; AAA30804.1;
 DR EMBL; M33750; AAA30805.1;
 DR PIR; B40080; B40080.
 DR HSP; P15692; LVGH.
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam: PF00341; PDGF; 1.
 DR ProDom: PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 DR Mitogen: Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Alternative splicing; Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 BY SIMILARITY.
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (POTENTIAL).
 FT VARSPLIC 139 183 Missing (in isoform Beta).

```

FT VARSPLIC 184 184 /FTId-VSP_004613.
FT R -> K (in isoform Beta).
FT /FTId-VSP_004614.
SQ SEQUENCE 190 AA; 22310 MW; EDBF903E46E24789 CRC64;

Query Match 73.18; Score 57; DB 1; Length 190;
Best Local Similarity 76.94; Pred. No. 0.013;
Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVTEES 13
Db 86 CNDESLCVPTEES 98

RESULT 6
VEGA_MOUSE STANDARD; PRT; 214 AA.
AC Q00731; 1993 (Rel. 25, Created)
DT 01-APR-1993 (Rel. 34, Last sequence update)
DT 01-OCT-1996 (Rel. 42, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
DE VEGF OR VEGFA.
GN Mus musculus (Mouse).
OS Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORMS VEGF-1; VEGF-2 AND VEGF-3).
RX MEDLINE=92274860; PubMed=1592003;
RA Breier G., Albrecht U., Stenrer S., Risau W.;
RT "Expression of vascular endothelial growth factor during embryonic angiogenesis and endothelial cell differentiation.";
RL Development 114:521-532(1992).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORM VEGF-1).
RX MEDLINE=92355593; PubMed=1644816;
RA Claffey K.P., Wilkison W.O., Spiegelman B.M.;
RT "Vascular endothelial growth factor. Regulation by cell differentiation and activated second messenger pathways.";
RL J. Biol. Chem. 267:16317-16322(1992).
RN [3]
RP SEQUENCE OF 1-3 FROM N.A.
RX MEDLINE=96216498; PubMed=8632007;
RA Shima D.T., Kuroki M., Deutsch U., Ng Y., Adams A.P., D'Amore P.A.;
RT "The mouse gene for vascular endothelial growth factor. Genomic structure, definition of the transcriptional unit, and characterization of transcriptional and post-transcriptional regulatory sequences.";
RL J. Biol. Chem. 271:3877-3883(1996).
CC -1- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).
CC -1- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PlGF (By similarity).
CC -1- SUBCELLULAR LOCATION: VEGF-1 and VEGF-2 are secreted while VEGF-3 remains cell-surface associated unless released by heparin.
CC -1- ALTERNATIVE PRODUCTS:
CC Name-VEGF-3; Synonyms-VEGF188;
CC IsoId=Q00731-1; Sequence-Displayed;
CC Name-VEGF-1; Synonyms-VEGF164;
CC IsoId=Q00731-2; Sequence-VSP_004626, VSP_004627;
CC Name-VEGF-2; Synonyms-VEGF120;
CC IsoId=Q00731-3; Sequence-VSP_004628;
CC -1- TISSUE SPECIFICITY: In developing embryos, expressed mainly in the choroid plexus, paraventricular neuroepithelium, placenta and kidney glomeruli. Also found in bronchial epithelium, adrenal gland and in seminiferous tubules of testis. High expression of

```

```

CC VEGF continues in kidney glomeruli and choroid plexus in adults.
CC -1- DOMAIN: VEGF-3 contains a basic insert which acts as a cell retention signal.
CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/ or send an email to license@isb-sib.ch).
CC EMBL; S37052; AAB22252.1; -
CC EMBL; S38083; AAB22253.1; -
CC EMBL; S38100; AAB22254.1; -
CC EMBL; M95200; AAA40547.1; -
CC EMBL; U41383; -- NOT_ANNOTATED_CDS.
CC PIR; A44881; A44881.
CC PIR; B44881; B44881.
CC HSSP; P15692; 2VPF.
CC MGD; MGI:103178; Vegfa.
CC InterPro; IPR000072; PD_growth_factor.
CC Pfam; PF00341; PDGF; 1.
CC ProDom; PD001629; PD_growth_factor; 1.
CC SMART; SM00141; PDGF; 1.
CC PROSITE; PS00249; PDGF_1; 1.
CC PROSITE; PS50278; PDGF_2; 1.
CC MiGen; Angiogenesis; Growth factor; Glycoprotein; Signal;
CC Heparin-binding; Alternative splicing; Multigene family.
CC SIGNAL 1 26
CC CHAIN 27 214 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
CC DISULFID 51 93 BY SIMILARITY.
CC DISULFID 82 127 BY SIMILARITY.
CC DISULFID 86 129 BY SIMILARITY.
CC DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
CC DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
CC CARBOHYD 100 100 N-LINKED (GLCNAC...) (PROBABLE).
CC VARSPLIC 140 140 K -> N (in isoform VEGF-1).
CC VARSPLIC 141 164 /FTId-VSP_004626.
CC VARSPLIC 141 208 /FTId-VSP_004627.
CC VARSPLIC 141 208 Missing (in isoform VEGF-2).
CC CONFLICT 117 118 /FTId-VSP_004628.
CC SEQUENCE 214 AA; 25283 MW; B5540B51E4BB6E17 CRC64;
Query Match 71.88; Score 56; DB 1; Length 214;
Best Local Similarity 71.48; Pred. No. 0.021;
Matches 10; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 CNSEMRCPVTEES 14
Db 86 CNDEALECVPTEES 99

RESULT 7
VEGA_MOUSE STANDARD; PRT; 214 AA.
AC P16612; Q9JKX7; Q9QXG6; Q9QXG7;
DT 01-AUG-1990 (Rel. 15, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
DE VEGF OR VEGFA.
GN Rattus norvegicus (Rat).
OS Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORM VEGF-A164), AND SEQUENCE OF 27-190.
RX MEDLINE=90207249; PubMed=2320579;

```

RA Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
RA Palisi T.M., Hope D.A., Thomas K.A.;
RT "Amino acid and cDNA sequences of a vascular endothelial cell mitogen
RT that is homologous to platelet-derived growth factor";
RL Proc. Natl. Acad. Sci. U.S.A. 87:2628-2633(1990).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORMS VEGF-A188; VEGF-A164; VEGF-A144 AND
RP VEGF-A120).
RA Ishii H., Arakawa T., Okayama M., Oota I., Takuma T., Inomata K.;
RA "Developmental expression of vascular endothelial growth factor-A
RT (VEGF-A) splicing variants, VEGF-A188, VEGF-A164, and VEGF-A120 in rat
RT masseter muscle";
RL Submitted (DEC-1999) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE OF 27-40.
RP TISSUE-Glial tumor;
RC MEDLINE=95221439; PubMed=7706320;
RA DiSalvo J., Bayne M.L., Conn G., Kwok P.W., Trivedi P.G.,
RA Soderman D.D., Palisi T.M., Sullivan K.A., Thomas K.A.;
RT "Purification and characterization of a naturally occurring vascular
RT endothelial growth factor, placenta growth factor heterodimer";
RL J. Biol. Chem. 270:7717-7723(1995).
CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
CC endothelial cell growth. It induces endothelial cell
CC proliferation, promotes cell migration, inhibits apoptosis, and
CC induces permeabilization of blood vessels. It binds to the
CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
CC heparin (By similarity).
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
CC with PlGF (By similarity).
CC -!- SUBCELLULAR LOCATION: VEGF-A120 is acidic and freely secreted.
CC VEGF-A164 is more basic, has heparin-binding properties and,
CC although a significant proportion remains cell-associated, most is
CC freely secreted. VEGF-A188 is very basic; it is cell-associated
CC after secretion and is bound avidly by heparin and the
CC extracellular matrix, although it may be released as a soluble
CC form by heparin, heparinase or plasmin (By similarity).
CC -!- ALTERNATIVE PRODUCTS:
CC Event-Alternative splicing: Named isoforms=4;
CC Comment=Additional isoforms seem to exist;
CC Names=VEGF-A188;
CC IsoId=P16612-1; Sequence=Displayed;
CC Name=VEGF-A164;
CC IsoId=P16612-2; Sequence=VSP_004629, VSP_004630;
CC Name=VEGF-A144;
CC IsoId=P16612-3; Sequence=VSP_004632;
CC Name=VEGF-A120;
CC IsoId=P16612-4; Sequence=VSP_004631;
CC -!- TISSUE SPECIFICITY: Expressed in the pituitary, in brain, in
CC particularly in supraoptic and paraventricular nuclei and the
CC choroid plexus. Also found abundantly in the corpus luteum of the
CC ovary and in kidney glomeruli.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL Outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
CC or send an email to license@sib-sib.ch).
CC -----
CC EMBL; M32167; AAA1211.1;
CC EMBL; AF215725; AAF19211.1;
CC EMBL; AF215726; AAF19212.1;
CC EMBL; AF222779; AAF25958.1;
CC HSP; P15692; IVP.
CC InterPro; IPR000072; PD_growth_factor.
CC Pfam; PF00341; PDGF; 1.
CC ProDom; PD001629; PD_growth_factor; 1.
CC SMART; SM00141; PDGF; 1.
CC PROSITE; PS00249; PDGF_1; 1.
CC PROSITE; PS0278; PDGF_2; 1.

KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
KW Heparin-binding; Alternative splicing; Multigene family.
FT SIGNAL 1 26
FT CHAIN 27 214 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
FT DISULFID 51 93 BY SIMILARITY.
FT DISULFID 82 127 BY SIMILARITY.
FT DISULFID 86 129 BY SIMILARITY.
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
FT CARBOHYD 100 100 N-LINKED (GLCNAC. . .).
FT VARSPLIC 140 140 K -> N (in isoform VEGF-A164).
FT VARSPLIC 141 164 /FTId-VSP_004629.
FT VARSPLIC 141 164 Missing (in isoform VEGF-A164).
FT VARSPLIC 141 208 /FTId-VSP_004630.
FT VARSPLIC 165 208 /FTId-VSP_004631.
FT VARSPLIC 165 208 Missing (in isoform VEGF-A144).
FT CONFLICT 101 101 /FTId-VSP_004632.
SQ SEQUENCE 214 AA; 25239 MW; 60FBB876F5304946 CRC64;
Query Match 71.8%; Score 56; DB 1; Length 214;
Best Local Similarity 71.4%; Pred. No. 0.021;
Matches 10; Conservative 0; Mismatches 4; Indels 0; Gaps 0;
Oy 1 CNSEMRCEVPTSES 14
Db 86 CNDEALECVPTSES 99
RESULT 8
VEGA_PIG STANDARD; PRT; 190 AA.
ID VEGA_PIG
AC P49153; OSGLS2;
DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
DE permeability factor) (VPF).
GN VEGF OR VEGFA.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-Heart.
RX MEDLINE=95143284; PubMed=7841203;
RA Sharma H.S., Tang Z.H., Gho B.C.H., Verdouw P.D.;
RT "Nucleotide sequence and expression of the porcine vascular
RT endothelial growth factor";
RL Biochim. Biophys. Acta 1260:235-238(1995).
RN [2]
RP SEQUENCE FROM N.A.
RA Lee T., Canty J.M.;
RT "PCR cloning of porcine cardiac vascular endothelial growth factor
RT gene";
RL Submitted (NOV-2000) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
CC endothelial cell growth. It induces endothelial cell
CC proliferation, promotes cell migration, inhibits apoptosis, and
CC induces permeabilization of blood vessels. It binds to the
CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
CC heparin (By similarity).
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
CC with PlGF (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or
CC to the extracellular matrix unless released by heparin (By
CC similarity).
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL Outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
CC or send an email to license@sib-sib.ch).
CC -----
CC EMBL; M32167; AAA1211.1;
CC EMBL; AF215725; AAF19211.1;
CC EMBL; AF215726; AAF19212.1;
CC EMBL; AF222779; AAF25958.1;
CC HSP; P15692; IVP.
CC InterPro; IPR000072; PD_growth_factor.
CC Pfam; PF00341; PDGF; 1.
CC ProDom; PD001629; PD_growth_factor; 1.
CC SMART; SM00141; PDGF; 1.
CC PROSITE; PS00249; PDGF_1; 1.
CC PROSITE; PS0278; PDGF_2; 1.

CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).

CC EMBL; X81380; CAA57143.1; -
 CC EMBL; AF318502; AAG33064.1; -
 CC PIR; S52130; S52130.
 CC HSP; P15692; IGVH.
 CC InterPro: IPR000072; PD_growth_factor.
 CC Pfam; PF00341; PDGF; 1.
 CC ProDom; PD001629; PD_growth_factor; 1.
 CC SMART; SM00141; PDGF; 1.
 CC PROSITE; PS00249; PDGF_1; 1.
 CC PROSITE; PS0278; PDGF_2; 1.
 CC Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 190
 FT DISULFID 51 93
 FT DISULFID 82 127
 FT DISULFID 86 129
 FT DISULFID 76 76
 FT DISULFID 85 85
 FT CARBOHYD 100 100
 FT CONFLICT 102 102
 FT SEQUENCE 190 AA; 22368 MW; 04D40B8D7913047F CRC64;
 SQ

Query Match 70.5%; Score:55; DB 1; Length 190;
 Best Local Similarity 76.9%; Pred. No. 0.028;
 Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CNSEMRCPVTEE 13
 DB 86 CNDGEGCVPTTE 98

RESULT 9
 VEGA_CANFA STANDARD; PRT; 214 AA.
 AC Q9MYV3; Q9XSF3; Q9XSF4; Q9XSF5;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
 DE permeability factor) (VPF).
 GN VEGF OR VEGFA.
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 OX NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF-188).
 RX MEDLINE=20125516; PubMed=10661874;
 RA Scheldegger P., Weiglhofer W., Suatze S., Kaser-Hotz B., Steiner R.,
 RA Ballmer-Hofer K., Jaussi R.;
 RT "Vascular endothelial growth factor (VEGF) and its receptors in tumor-
 RL bearing dogs.";
 RL Biol. Chem. 380:1449-1454 (1999).
 RN [2]
 RP SEQUENCE FROM N.A. (ISOFORMS VEGF-188; VEGF-182 AND VEGF-164).
 RC TISSUE=Heart;
 RA Jingjing L., Roque R.S.;
 RA Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 CC endothelial cell growth. It induces endothelial cell
 CC proliferation, promotes cell migration, inhibits apoptosis, and
 CC induces permeabilization of blood vessels. It binds to the
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 CC heparin (by similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 CC with PlGF (by similarity).

CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or
 CC to the extracellular matrix unless released by heparin (By
 CC similarity).
 CC -!- ALTERNATIVE PRODUCTS:
 CC Event-Alternative splicing; Named isoforms=3;
 CC Comment=Additional isoforms seem to exist;
 CC Name=VEGF-188;
 CC IsoId=Q9MYV3-1; Sequence=Displayed;
 CC Name=VEGF-182;
 CC IsoId=Q9MYV3-2; Sequence=VSP_004617;
 CC Name=VEGF-164;
 CC IsoId=Q9MYV3-3; Sequence=VSP_004615, VSP_004616;
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC THIS SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).

CC EMBL; AJ133758; CAB82426.1; -
 CC EMBL; AF133250; AAD29684.1; -
 CC EMBL; AF133249; AAD29683.1; -
 CC EMBL; AF133248; AAD29682.1; -
 CC HSP; P15692; IGVH.
 CC InterPro: IPR000072; PD_growth_factor.
 CC Pfam; PF00341; PDGF; 1.
 CC ProDom; PD001629; PD_growth_factor; 1.
 CC SMART; SM00141; PDGF; 1.
 CC PROSITE; PS00249; PDGF_1; 1.
 CC PROSITE; PS0278; PDGF_2; 1.
 CC Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Alternative splicing; Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 214
 FT DISULFID 51 93
 FT DISULFID 82 127
 FT DISULFID 86 129
 FT DISULFID 76 76
 FT DISULFID 85 85
 FT CARBOHYD 100 100
 FT VARSPLIC 140 140
 FT VARSPLIC 141 164
 FT VARSPLIC 159 164
 FT CONFLICT 143 143
 FT CONFLICT 161 161
 FT SEQUENCE 214 AA; 25175 MW; 0AC980A158C44B27 CRC64;
 SQ

Query Match 70.5%; Score 55; DB 1; Length 214;
 Best Local Similarity 76.9%; Pred. No. 0.031;
 Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CNSEMRCPVTEE 13
 DB 86 CNDGEGCVPTTE 98

RESULT 10
 VEGA_MESAU STANDARD; PRT; 190 AA.
 ID VEGA_MESAU
 AC Q99PS1;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 15-SEP-2003 (Rel. 42, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
 DE permeability factor) (VPF).
 GN VEGF OR VEGFA.
 OS Mesocricetus auratus (Golden hamster).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
 OC Mesocricetus.
 OX NCBI_TaxID=10036;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Decidua, and Embryo;
 RX MEDLINE=99311285; PubMed=10382276;
 RA Yi X.J., Jiang H.Y., Lee K.K., Tang P.L., Chow P.H.;
 RT "Expression of vascular endothelial growth factor (VEGF) and its
 RT receptors during embryonic implantation in the golden hamster
 RT (Mesocricetus auratus).";
 RL Cell Tissue Res. 296:339-349(1999).
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 CC endothelial cell growth. It induces endothelial cell
 CC proliferation, promotes cell migration, inhibits apoptosis, and
 CC induces permeabilization of blood vessels. It binds to the
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 CC heparin (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 CC with p1GF (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or
 CC to the extracellular matrix unless released by heparin (By
 CC similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announcement/>
 CC or send an email to license@isb-sib.ch).
 CC
 DR EMBL; AF063013; AAK00049.1;
 DR HSPG; P15692; 1VGH.
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom: PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS02078; PDGF_2; 1.
 DR Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 BY SIMILARITY.
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (POTENTIAL).
 SQ SEQUENCE 190 AA; 22276 MW; F00C5A8EA79A465F CRC64;
 Query Match 65.4%; Score 51; DB 1; Length 190;
 Best Local Similarity 64.3%; Pred. No. 0.13;
 Matches 9; Conservative 1; Mismatches 4; Indels 0; Gaps 0;
 QY 1 CNSEMRECVPTSES 14
 Db 86 CSDEALECVPTSES 99
 RESULT 11
 VEGA_HORSE STANDARD; PRT; 190 AA.
 AC Q9GKR0;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
 DE permeability factor) (VPF).
 GN VEGF OR VEGFA.

OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 OX NCBI_TaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Miura N., Misumi K., Kawahara K., Nakashima M., Fukumitsu S.,
 RA Kawabata H., Uto N., Oka T., Maruyama I., Sakamoto H.;
 RT "Cloning of cDNA and high-level expression of equine vascular
 RT endothelial growth factor (VEGF).";
 RL Submitted (JAN-2001) to the EMBL/GenBank/DBJ databases.
 CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial
 CC cell growth. Induces endothelial proliferation and vascular
 CC permeability (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 CC with p1GF (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or
 CC to the extracellular matrix unless released by heparin (By
 CC similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announcement/>
 CC or send an email to license@isb-sib.ch).
 CC
 DR EMBL; AB053350; BAB20890.1;
 DR HSPG; P15692; 1VGH.
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom: PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS02078; PDGF_2; 1.
 DR Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 BY SIMILARITY.
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (POTENTIAL).
 SQ SEQUENCE 190 AA; 22312 MW; 87E9E161439E5F87 CRC64;
 Query Match 62.8%; Score 49; DB 1; Length 190;
 Best Local Similarity 69.2%; Pred. No. 0.28;
 Matches 9; Conservative 0; Mismatches 4; Indels 0; Gaps 0;
 QY 1 CNSEMRECVPTSE 13
 Db 86 CNDGLECVPTAE 98
 RESULT 12
 YME9_YEAST STANDARD; PRT; 1361 AA.
 AC Q04693;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 15-SEP-2003 (Rel. 42, Last annotation update)
 DE Hypothetical 153.8 kDa protein in GAL80-PRP39 intergenic region.
 GN YML049C OR YN9827.03C.
 OS Saccharomyces cerevisiae (Baker's yeast).
 OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
 OC Saccharomycetales; Saccharomycetaceae; Saccharomyces.
 OX NCBI_TaxID=4932;
 RN [1]
 RP SEQUENCE FROM N.A.

RC STRAIN-S288c / AB972;
 RX PubMed-9169872;
 RA Bowman S., Churcher C.M., Badcock K., Brown D., Chillingworth T.,
 RA Connor R., Dedman K., Devlin K., Gentles S., Hamlin N., Hunt S.,
 RA Jagels K., Lye G., Moulé S., Odell C., Pearson D., Rajandream M.A.,
 RA Rice P., Skelton J., Walsh S., Whitehead S., Barrell B.G.:
 RT "The nucleotide sequence of Saccharomyces cerevisiae chromosome
 XIII.";
 RL Nature 387:90-93(1997).
 CC -1- SIMILARITY: IN THE C-TERMINAL, TO THE C-TERMINAL OF HUMAN
 CC HYPOTHETICAL PROTEIN KIAA0017.
 CC -----
 CC THIS SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (see <http://www.isb-sib.ch/annouce/>
 CC or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; Z47816; CAA87825.1;
 DR PIR; S50943; S50943
 DR SGD; S0004513; RSEL.
 DR GO; GO:0005686; C:srnp U2; IDA.
 DR GO; GO:0030620; F:U2 snRNA binding activity; IPI.
 DR GO; GO:0000245; P:spliceosome assembly; IDA.
 DR InterPro; IPR004871; CPSE_A.
 DR Pfam; PF03178; CPSE_A; 1.
 KW Hypothetical protein.
 SO SEQUENCE 1361 AA; 153783 MW; 4D92837F5C267D67 CRC64;
 Query Match 51.3%; Score 40; DB 1; Length 1361;
 Best Local Similarity 50.0%; Pred. No. 64;
 Matches 7; Conservative 3; Mismatches 4; Indels 0; Gaps 0;
 Qy 1 CENSEMRECVPTES 14
 Db 603 CTAEHLRHIVPTGKS 616
 RESULT 13
 PTPU_HUMAN STANDARD; PRT; 1430 AA.
 AC Q92729;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Protein-tyrosine phosphatase U precursor (EC 3.1.3.48) (R-PTP-U)
 DE (Protein-tyrosine phosphatase J) (PTP-J) (Pancreatic carcinoma
 DE phosphatase 2) (PCP-2).
 GN PTPRU OR PCP2.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Pancreas;
 RX MEDLINE=96293401; PubMed=8700514;
 RA Wang H., Lian Z., Lerch M.M., Chen Z., Xie W., Ullrich A.;
 RT "Characterization of PCP-2, a novel receptor protein tyrosine
 RT phosphatase of the MAM domain family.";
 RL Oncogene 12:2555-2562(1996).
 CC -1- FUNCTION: REGULATION OF PROCESSES INVOLVING CELL CONTACT AND
 CC ADHESION SUCH AS GROWTH CONTROL, TUMOR INVASION, AND METASTASIS.
 CC FORMS COMPLEXES WITH BETA-CATENIN AND GAMMA-CATENIN/PLAKOGLOBIN
 CC (BY SIMILARITY).
 CC -1- CATALYTIC ACTIVITY: Protein tyrosine phosphate + H(2)O -> protein
 CC tyrosine + phosphate.
 CC -1- SUBCELLULAR LOCATION: Type I membrane protein.
 CC -1- TISSUE SPECIFICITY: HIGH LEVELS IN BRAIN, PANCREAS, AND SKELETAL
 CC MUSCLE; LESS IN COLON, KIDNEY, LIVER, STOMACH, AND UTERUS; NOT
 CC EXPRESSED IN PLACENTA AND SPLEEN.
 CC -----
 CC -1- INDUCTION: UPREGULATED UPON CELL CONTACT.
 CC -1- SIMILARITY: Contains 1 MAM domain.
 CC -1- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
 CC -1- SIMILARITY: Contains 4 fibronectin type III domains.
 CC -1- SIMILARITY: Contains 2 protein-tyrosine phosphatase domains.
 CC -----
 CC THIS SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (see <http://www.isb-sib.ch/annouce/>
 CC or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; X97198; CAA65832.1;
 DR HSSP; P28827; IRPM.
 DR Genew; HGNC:9683; PTPRU.
 DR MIM; 602454;
 DR GO; GO:0005887; C:integral to plasma membrane; TAS.
 DR GO; GO:0005001; F:transmembrane receptor protein tyrosine pho. .; TAS.
 DR GO; GO:0007155; P:cell adhesion; TAS.
 DR GO; GO:0007185; P:transmembrane receptor protein tyrosine pho. .; TAS.
 DR InterPro; IPR003961; FN_III.
 DR InterPro; IPR003962; FNIII_subd.
 DR InterPro; IPR003599; Ig.
 DR InterPro; IPR003006; Ig_MHC.
 DR InterPro; IPR000998; MAM domain.
 DR InterPro; IPR000387; TYR_phosphatase.
 DR InterPro; IPR000242; Tyr_PP.
 DR Pfam; PF00041; fn3; 3.
 DR Pfam; PF00629; MAM; 1.
 DR Pfam; PF0102; Y_phosphatase; 2.
 DR PRINTS; PR00014; ENTPEI1.
 DR PRINTS; PR00020; MANDOMAIN.
 DR PRINTS; PR00700; PTPPHPTASE.
 DR SMART; SM00060; FN3; 3.
 DR SMART; SM00409; IG; 1.
 DR SMART; SM00137; MAM; 1.
 DR SMART; SM00194; PTPC; 2.
 DR PROSITE; PS00383; TYR_PHOSPHATASE_1; 2.
 DR PROSITE; PS00383; TYR_PHOSPHATASE_2; 2.
 DR PROSITE; PS50056; TYR_PHOSPHATASE_2; 2.
 DR PROSITE; PS50055; TYR_PHOSPHATASE_PTP; 2.
 DR PROSITE; PS00740; MAM_1; 1.
 DR PROSITE; PS50060; MAM_2; 1.
 KW Hydrolase; Receptor; Glycoprotein; Signal; Transmembrane;
 KW Immunoglobulin domain; Repeat.
 FT SIGNAL 1 18
 FT CHAIN 19 1430 PROTEIN-TYROSINE PHOSPHATASE U.
 FT DOMAIN 19 740 EXTRACELLULAR (POTENTIAL).
 FT TRANSMEM 741 764 POTENTIAL.
 FT DOMAIN 765 1430 CYTOPLASMIC (POTENTIAL).
 FT DOMAIN 22 187 MAM.
 FT DOMAIN 202 268 IG-LIKE C2-TYPE.
 FT DOMAIN 287 374 FIBONECTIN TYPE-III 1.
 FT DOMAIN 382 465 FIBONECTIN TYPE-III 2.
 FT DOMAIN 485 570 FIBONECTIN TYPE-III 3.
 FT DOMAIN 587 668 FIBONECTIN TYPE-III 4.
 FT DOMAIN 899 1127 PROTEIN-TYROSINE PHOSPHATASE 1.
 FT DOMAIN 1190 1428 PROTEIN-TYROSINE PHOSPHATASE 2.
 FT ACT_SITE 1069 1069 BY SIMILARITY.
 FT ACT_SITE 1364 1364 BY SIMILARITY.
 FT DISULFID 209 261 POTENTIAL.
 FT CARBOHYD 75 75 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 95 95 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 133 133 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 204 204 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 405 405 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 427 427 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 543 543 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 581 581 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT CARBOHYD 679 679 N-LINKED (GLCNAC. .) (POTENTIAL).
 SQ SEQUENCE 1430 AA; 160227 MW; A5F366C16FCF8E48 CRC64;
 MW: 160227 MW; A5F366C16FCF8E48 CRC64;

Query Match 51.38; Score 40; DB 1; Length 1430;
 Best Local Similarity 58.38; Pred. No. 67;
 Matches 7; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Oy 2 NSEMRCPTEE 13
 Db 427 NOTIRECVKTEQ 438

RESULT 14

PK5_MOUSE
 AC PK5_MOUSE STANDARD; PRT: 1877 AA.
 DT 01-FEB-1995 (Rel. 31, Created)
 DT 16-FEB-2001 (Rel. 40, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Proprotein convertase subtilisin/kexin type 5 precursor (EC 3.4.21.-)
 DE (Proprotein convertase PC5) (Subtilisin/kexin-like protease PC5)
 DE (convertase PC5) (PC6) (Subtilisin-like proprotein convertase 6) (SPC6).
 DE PCSK5.
 GN PCSK5.
 OS Mus musculus (Mouse).
 OC Eukaryota; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheraia; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxId=10090;
 RN
 RP SEQUENCE OF 330-1877 FROM N.A. (ISOFORM PC5B).
 RC STRAIN=ICR; TISSUE=Intestine;
 RX MEDLINE=93327934; PubMed=8335106;
 RA Nakagawa T., Murakami K., Nakayama K.;
 RT "Identification of an isoform with an extremely large Cys-rich region
 of PC6, a kex2-like processing endoprotease.";
 RL FEBS Lett. 327:165-171(1993).
 RN
 RP SEQUENCE FROM N.A. (ISOFORM PC5A).
 RC TISSUE=Brain, and Intestine;
 RX MEDLINE=93224489; PubMed=8468318;
 RA Nakagawa T., Hosaka M., Torii S., Watanabe T., Murakami K.,
 RT "Identification and functional expression of a new member of the
 mammalian Kex2-like processing endoprotease family: its striking
 structural similarity to PAC6.";
 RL J. Biochem. 113:132-135(1993).
 RN
 RP SEQUENCE FROM N.A. (ISOFORM PC5A).
 RC TISSUE=Adrenal cortex;
 RX MEDLINE=93342056; PubMed=8341687;
 RA Lussan J., Vieau D., Hamelin J., Day R., Chretien M., Seidah N.G.;
 RT "cDNA structure of the mouse and rat subtilisin/kexin-like PC5: a
 candidate proprotein convertase expressed in endocrine and
 nonendocrine cells.";
 RL Proc. Natl. Acad. Sci. U.S.A. 90:6691-6695(1993).
 RN
 RP PARTIAL SEQUENCE AND SUBCELLULAR LOCATION.
 RX MEDLINE=97103178; PubMed=8947550;
 RA De Bie I., Marcinkiewicz M., Malide D., Lazure C., Nakayama K.,
 RT "The isoforms of proprotein convertase PC5 are sorted to different
 subcellular compartments.";
 RL J. Cell Biol. 135:1261-1275(1996).
 RN
 RP DEVELOPMENTAL EXPRESSION.
 RX MEDLINE=96293359; PubMed=8698813;
 RA Constam D.B., Calton M., Robertson E.J.;
 RT "SPC4, SPC6, and the novel protease SPC7 are coexpressed with bone
 morphogenetic proteins at distinct sites during embryogenesis.";
 RL J. Cell Biol. 134:181-191(1996).
 RN
 RP DEVELOPMENTAL EXPRESSION.
 RX MEDLINE=97436919; PubMed=9291583;
 RA Rancourt S.L., Rancourt D.E.;
 RT "Murine subtilisin-like proteinase SPC6 is expressed during embryonic
 implantation, somitogenesis, and skeletal formation.";

Dev. Genet. 21:75-81(1997).
 CC -1- FUNCTION: LIKELY TO REPRESENT A WIDESPREAD ENDOPEPTIDASE ACTIVITY
 WITHIN THE CONSTITUTIVE AND REGULATED SECRETORY PATHWAY. CAPABLE
 OF CLEAVAGE AT THE RX(K/R)R CONSENSUS MOTIF. MAY BE RESPONSIBLE
 FOR THE MATURATION OF GASTROINTESTINAL PEPTIDES. MAY BE INVOLVED
 IN THE CELLULAR PROLIFERATION OF ADRENAL CORTEX VIA THE ACTIVATION
 OF GROWTH FACTORS.
 CC -1- CATALYTIC ACTIVITY: Release of mature proteins from their
 propeptides by cleavage of Arg-Xaa-Yaa-Arg-1-2aa bonds, where Xaa
 can be any amino acid and Yaa is Arg or Lys.
 CC -1- SUBCELLULAR LOCATION: PC5A IS SECRETED THROUGH THE REGULATED
 SECRETORY PATHWAY. PC5B IS A TYPE I MEMBRANE PROTEIN LOCALIZED TO
 A PARANUCLEAR POST-GOLGI NETWORK COMPARTMENT IN COMMUNICATION WITH
 EARLY ENDOSOMES.
 CC -1- ALTERNATIVE PRODUCTS:
 Event=Alternative splicing; Named isoforms=2;
 Comment=Additional isoforms seem to exist;
 Name=PC5B; Synonyms=Long;
 Name=PC5A; Synonyms=Short;
 IsoId=Q04592-1; Sequence=displayed;
 IsoId=Q04592-2; Sequence=VSP_005438, VSP_005439;
 CC -1- TISSUE SPECIFICITY: PC5A IS EXPRESSED IN MOST TISSUES BUT IS MOST
 ABUNDANT IN THE INTESTINE AND ADRENALS. PC5B IS EXPRESSED IN THE
 INTESTINE, ADRENALS AND LUNG BUT NOT IN THE BRAIN.
 CC -1- DEVELOPMENTAL STAGE: WEAKLY EXPRESSED THROUGHOUT THE EMBRYO,
 EXCEPT IN THE DEVELOPING NERVOUS SYSTEM, THE RIBS AND THE LIVER,
 BUT MARKEDLY UPREGULATED AT DISCRETE SITES DURING DEVELOPMENT. AT
 E6.5, PROMINENT EXPRESSION OBSERVED IN DIFFERENTIATED DECIDUA. AT
 E7.5, INTENSE EXPRESSION IN EXTRAEMBRYONIC ENDODERM, AMNION AND
 NASCENT MESODERM. AT 8.5, ABUNDANT EXPRESSION IN SOMITES AND YOLK
 SAC FOLLOWED BY A CONFINATION TO DERMATOTOME COMPARTMENT. BETWEEN
 E9.5 AND E11.5, ABUNDANT EXPRESSION IN AER (THICKENED ECTODERMAL
 CELLS OF LIMB BUDS). AT E12.5, EXPRESSION IN THE LIMBS IS CONFINED
 TO THE CONDENSING MESENCHYM SURROUNDING THE CARTILAGE. AT THIS
 STAGE, STRONG EXPRESSION ALSO DETECTED IN VERTEBRAL AND FACIAL
 CARTILAGE PRIMORDIA AND IN THE MUSCLE OF THE TONGUE. AT E16.5,
 ABUNDANT EXPRESSION IN EPITHELIAL CELLS OF THE INTESTINAL VILLI.
 CC -1- ISOFORM A IS MOST ABUNDANT AT ALL STAGES BUT SIGNIFICANT LEVELS OF
 ISOFORM B OCCUR AT E12.5.
 CC -1- DOMAIN: THE PROPEPTIDE DOMAIN ACTS AS AN INTRAMOLECULAR CHAPERONE
 ASSISTING THE FOLDING OF THE ZYMOGEN WITHIN THE ENDOPLASMIC
 RETICULUM.
 CC -1- DOMAIN: AC 1 AND AC 2 (CLUSTERS OF ACIDIC AMINO ACIDS) CONTAIN
 SORTING INFORMATION. AC 1 DIRECTS TGN LOCALIZATION AND INTERACTS
 WITH THE TGN SORTING PROTEIN PACS-1.
 CC -1- SIMILARITY: Belongs to peptidase family S8.
 CC -1- SIMILARITY: Contains 1 homo B/P domain.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 between the Swiss Institute of Bioinformatics and the EMBL outstation -
 the European Bioinformatics Institute. There are no restrictions on its
 use by non-profit institutions as long as its content is in no way
 modified and this statement is not removed. Usage by and for commercial
 entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 or send an email to license@isb-sib.ch).
 CC
 CC EMBL: D17583; BAA04507.1;
 CC EMBL: D12619; BAA02143.1;
 CC EMBL: L14932; AAA74636.1;
 CC PIR: A48225; A48225;
 CC PIR: S34583; S34583;
 CC HSSP: Q99405; IMPT.
 CC MEROPS: S08.076;
 CC MGd: MG1:97515; PCSK5.
 CC InterPro: IPR006212; Furin_repeat.
 CC InterPro: IPR002884; P_domain.
 CC InterPro: IPR006209; Peptidase_S8.
 CC Pfam: PF01483; P_protein; PARTIAL.
 CC Pfam: PF00082; Peptidase_S8;
 CC PRINTS: PR00723; SUBTILISIN.
 CC ProDom: PD000717; P_domain; 1.
 CC SMART: SM00261; FU; 22.
 CC PROSITE: PS00136; SUBTILASE_ASP; 1.

DR PROSITE; PS00137; SUBTILASE_HIS; 1.
 KW PROSITE; PS00138; SUBTILASE_SER; 1.
 KW Hydrolase; Serine protease; Zymogen; Signal;
 KW Cleavage on pair of basic residues; Repeat; Alternative splicing;
 KW Transmembrane.
 FT SIGNAL 1 34
 FT PROPEP 35 116
 FT CHAIN 117 1877
 FT DOMAIN 117 1768
 FT TRANSFEM 1769 1789
 FT DOMAIN 1790 1877
 FT DOMAIN 117 452
 FT DOMAIN 464 602
 FT DOMAIN 638 1753
 FT DOMAIN 1825 1844
 FT DOMAIN 1856 1877
 FT SITE 116 117
 FT SITE 521 523
 FT ACT_SITE 173 173
 FT ACT_SITE 214 214
 FT ACT_SITE 388 388
 FT CARBOHYD 227 227
 FT CARBOHYD 383 383
 FT CARBOHYD 667 667
 FT CARBOHYD 754 754
 FT CARBOHYD 804 804
 FT CARBOHYD 854 854
 FT CARBOHYD 951 951
 FT CARBOHYD 1016 1016
 FT CARBOHYD 1220 1220
 FT CARBOHYD 1317 1317
 FT CARBOHYD 1523 1523
 FT CARBOHYD 1711 1711
 FT CARBOHYD 1733 1733
 FT VARSPLIC 878 915
 FT VARSPLIC 916 1877
 FT VARSPLIC 1877 AA; 209287 MW; EC850E2DF20EA1C3 CRC64;
 Query Match 51.3%; Score 40; DB 1; Length 1877;
 Best Local Similarity 58.3%; Pred. No. 88;
 Matches 7; Conservative 2; Mismatches 3; Indels 0; Gaps 0;
 QY 2 NSEMRECVPTPE 13
 Db 1031 DSEYECMPCEE 1042
 RESULT 15
 TSHB_BOVIN STANDARD; PRT; 138 AA.
 AC P01223;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 13-AUG-1987 (Rel. 05, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Thyrotropin beta chain precursor (Thyroid-stimulating hormone beta subunit) (TSH-beta) (TSH-B).
 GN TSHB.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA MEDLINE=84185607; PubMed=6325416;
 RA Maurer R.A., Croyle M.L., Donelson J.E.;
 RT "The sequence of a cloned cDNA for the beta subunit of bovine thyrotropin predicts a protein containing both NH2- and COOH-terminal

extensions.";
 J. Biol. Chem. 259:5024-5027(1984).
 [2]
 SEQUENCE OF 21-132
 MEDLINE=71111428; PubMed=5101174;
 Liao T.-H., Pierce J.G.;
 "The primary structure of bovine thyrotropin. II. The amino acid sequences of the reduced, S-carboxymethyl alpha and beta chains.";
 J. Biol. Chem. 246:850-865(1971).
 [3]
 PARTIAL SEQUENCE.
 MEDLINE=71111427; PubMed=5101173;
 Shome B., Liao T.-H., Howard S.M., Pierce J.G.;
 "The primary structure of bovine thyrotropin. I. Isolation and partial sequences of cyanogen bromide and tryptic peptides.";
 J. Biol. Chem. 246:833-849(1971).
 [4]
 DISULFIDE BONDS.
 MEDLINE=96239101; PubMed=8670056;
 Fairlie W.D., Stanton P.G., Hearn T.W.;
 "The disulphide bond structure of thyroid-stimulating hormone beta-subunit.";
 Biochem. J. 314:449-455(1996).
 CC -!- FUNCTION: INDISPENSABLE FOR THE CONTROL OF THYROID STRUCTURE AND METABOLISM.
 CC -!- SUBUNIT: HETERODIMER OF A COMMON ALPHA CHAIN AND A UNIQUE BETA CHAIN WHICH CONFERES BIOLOGICAL SPECIFICITY TO THYROTROPIN, LUTROPIN, FOLLITROPIN AND GONADOTROPIN.
 CC -!- SIMILARITY: BELONGS TO THE GLYCOPROTEIN HORMONES BETA CHAIN FAMILY.
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).
 EMBL; K01939; AAA30796.1;
 PIR; I45985; TTB0B.
 HSP; P01233; 1XUL.
 InterPro; IPR006208; Cys_knot.
 InterPro; IPR002400; GF_cys_knot.
 InterPro; IPR001545; Gly_hormone.
 Pfam; PF00007; Cys_knot; 1;
 PRINTS; PR00438; GFCYSKNOT;
 SMART; SM00068; GH; 1.
 PROSITE; PS00261; GLYCO_HORMONE_BETA_1; 1.
 PROSITE; PS00689; GLYCO_HORMONE_BETA_2; 1.
 Hormone; Glycoprotein; Signal.
 FT SIGNAL 1 20
 FT CHAIN 21 132
 FT PROPEP 133 138
 FT DISULFID 22 72
 FT DISULFID 36 87
 FT DISULFID 39 125
 FT DISULFID 47 103
 FT DISULFID 51 105
 FT DISULFID 108 115
 FT CARBOHYD 43 43
 FT CARBOHYD 138 AA; 15624 MW; 42D783B7C0E2EB98 CRC64;
 SQ SEQUENCE 138 AA; 15624 MW; 42D783B7C0E2EB98 CRC64;
 Query Match 48.7%; Score 38; DB 1; Length 138;
 Best Local Similarity 50.0%; Pred. NO. 14;
 Matches 6; Conservative 1; Mismatches 5; Indels 0; Gaps 0;
 QY 1 CNSEMRECVPTPE 12
 Db 15 CGQAMSFCTPTE 26
 Search completed: July 24, 2003; 14:46:16

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:14:50 Search time 24.7059 Seconds
(without alignments)
146.230 Million cell updates/sec

Title: PEPL

Perfect score: 78

Sequence: 1 CNSEMRRECVPTEES 14

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 830525 seqs, 258052604 residues

Total number of hits satisfying chosen parameters: 830525

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPREMBL_23:*

- 1: sp.archaea:*
- 2: sp.bacteria:*
- 3: sp.fungi:*
- 4: sp.human:*
- 5: sp.invertebrate:*
- 6: sp.mammal:*
- 7: sp.mhc:*
- 8: sp.organelle:*
- 9: sp.phage:*
- 10: sp.plant:*
- 11: sp.prodent:*
- 12: sp.virus:*
- 13: sp.vertebrate:*
- 14: sp.unclassified:*
- 15: sp.rvirus:*
- 16: sp.bacteriap:*
- 17: sp.archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	61	78.2	65	Q8MIN0	Q8min0 capra hircu
2	61	78.2	109	Q8MIN1	Q8mini capra hircu
3	59	75.6	126	Q9BDP7	Q9bdp7 macaca mula
4	59	75.6	191	Q96K70	Q96k70 homo sapien
5	59	75.6	191	Q96L82	Q96l82 homo sapien
6	59	75.6	191	Q95NE5	Q95ne5 macaca fasc
7	58	74.4	132	Q9YMF3	Q9ymf3 orf virus.
8	57	73.1	68	Q97500	Q97500 oryctolagus
9	57	73.1	75	Q18843	Q18843 oryctolagus
10	57	73.1	78	Q9NLS2	Q9nls2 capreolus c
11	57	73.1	118	Q9M2B1	Q9m2b1 ovis aries
12	57	73.1	123	Q9NLS1	Q9nls1 capreolus c
13	57	73.1	131	Q8MJ86	Q8mj86 capreolus c
14	57	73.1	190	Q77643	Q77643 ovis aries
15	56	71.8	110	Q88911	Q88911 rattus norv
16	56	71.8	141	Q70123	Q70123 mus musculu

17	56	71.8	190	11	Q91ZEL	Q91zel rattus norv
18	56	71.8	190	11	Q9QX39	Q9qx39 spalax leuc
19	55	70.5	124	6	Q9GK00	Q9gk00 callithrix
20	55	70.5	124	6	Q8SP29	Q8sp29 sus scrofa
21	55	70.5	127	6	Q8WQ4	Q8wq4 sus scrofa
22	55	70.5	184	6	Q8HY70	Q8hy70 mustela vis
23	55	70.5	189	6	Q95LQ4	Q95lq4 felis silve
24	52	66.7	144	13	Q73822	Q73822 brachydanio
25	52	66.7	148	13	Q42571	Q42571 xenopus lae
26	52	66.7	188	13	Q73682	Q73682 brachydanio
27	52	66.7	194	13	Q42572	Q42572 xenopus lae
28	51	65.4	142	11	Q9ERL6	Q9erl6 mesocricetu
29	49	62.8	128	6	Q8SEU5	Q8seu5 equus cabal
30	47	60.3	581	5	Q25239	Q25239 lucilia cup
31	46.5	59.6	592	4	Q81VE4	Q81ve4 homo sapien
32	46	59.0	875	12	Q9QTD4	Q9qtd4 marek's dis
33	45	57.7	82	2	Q8VR95	Q8vr95 escherichia
34	45	57.7	82	16	Q8PKW0	Q8fk0 escherichia
35	42	53.8	289	10	Q9LOE3	Q9loe3 arabidopsis
36	42	53.8	389	16	Q9KM65	Q9km65 vibrio chol
37	42	53.8	435	5	Q9Y016	Q9y016 paracentrot
38	42	53.8	2153	12	Q9YOR5	Q9yqr5 tula virus.
39	41.5	53.2	835	4	Q9H991	Q9h991 homo sapien
40	41	52.6	276	17	Q9HN68	Q9hn68 halobacteri
41	41	52.6	561	10	Q49970	Q49970 arabidopsis
42	41	52.6	561	10	Q39032	Q39032 arabidopsis
43	40	51.3	126	6	Q8WNS5	Q8wns5 bos taurus
44	40	51.3	420	6	Q9XS50	Q9xs50 bos taurus
45	40	51.3	465	17	Q8U317	Q8u317 pyrococcus

ALIGNMENTS

RESULT 1

ID Q8MIN0 PRELIMINARY; PRT; 65 AA.

AC Q8MIN0;
DT 01-OCT-2002 (TREMBlrel. 22, Created)
DT 01-OCT-2002 (TREMBlrel. 22, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor 121 (Fragment).
OS Capra hircus (Goat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Capra.
OX NCBI_TaxID=9925;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Corpus luteum;
RA Kawate N., Tsuji M., Tamada H., Inaba T., Sawada T.;
RT "Changes of Messenger RNAs Encoding Vascular Endothelial Growth Factor
and Its Receptors during the Development and Maintenance of Caprine
Corpora Lutea";
RL Submitted (MAY-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AY114353; AA076674.1;
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS0278; PDGF_2; 1.
FT NON_TER 1
SQ SEQUENCE 65 AA; 7562 MW; BA3E5384364B05E3 CRC64;

Query Match 78.2%; Score 61; DB 6; Length 65;
Best Local Similarity 78.6%; Pred. No. 0.00055;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Qy 1 CNSEMRRECVPTEES 14

Db 5 CNDESLECVPTES 18

QY	1	CNSEMRECVPTEES 14
	11	11111111
DB	80	CNDEGLECVPTEES 93
RESULT 4		
Q96KJ0		
ID	O96KJ0	PRELIMINARY; PRT; 191 AA.
AC	O96KJ0;	
DT	01-DEC-2001	(TREMBLrel. 19, Created)
DT	01-DEC-2001	(TREMBLrel. 19, Last sequence update)
DT	01-MAR-2003	(TREMBLrel. 23, Last annotation update)
DE	Vascular endothelial growth factor 165b.	
OS	Homo sapiens (Human).	
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
OC	Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.	
NCBI_TaxID=9606;		
RN	[1]	
RP	SEQUENCE FROM N.A.	
RC	TISSUE=Kidney;	
RA	Sugiono M., Winkler M., Gillatt D., Harper S.J., Bates D.O.;	
RT	"A new isoform of vascular endothelial growth factor mRNA is down-	
RT	regulated in renal tumors.";	
RL	(In) Unknown A. (eds.);	
RL	Proceedings of the 7th World Congress on Microcirculation, pp.3-3,	
RL	Sydney, Australia (2001).	
DR	EMBL; AF430806; AAL27435.1;	
DR	InterPro: IPR000072; PD_growth_factor.	
DR	Pfam: PF00341; PDGF; 1.	
DR	ProDom; PD001629; PD_growth_factor; 1.	
DR	SMART; SM00141; PDGF; 1.	
DR	PROSITE; PS00249; PDGF_1; 1.	
DR	PROSITE; PS0278; PDGF_2; 1.	
SEQ	SEQUENCE 191 AA; 22258 MW; D25243E540AC79BD CRC64;	
Query Match	75.6%;	Score 59; DB 4; Length 191;
Best Local Similarity	78.6%;	'Pred. No. 0.0037;
Matches 11; Conservative	0;	Mismatches 3; Indels 0; Gaps 0;

```

QY      1  CNSEMECVPTEES 14
      II  I  IIIIIII
Db      87  CNDGLECVPTEES 100

RESULT 5
Q96L82
ID      Q96L82      PRELIMINARY;      PRF;      191 AA.
AC      Q96L82;
DT      01-DRC-2001 (TEMBLrel. 19, Created)
DT      01-DRC-2001 (TEMBLrel. 19, Last sequence update)
DT      01-OCT-2002 (TEMBLrel. 22, Last annotation update)
DE      Vascular endothelial growth factor.
DE      VEGF.
GN      OS
OS      Homo sapiens (Human).
OC      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC      Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX      NCBI_TaxID=9606;
RN      [1]
SEQUENCE FROM N.A.
RP      Liu J., Peng X., Yuan J., Qiang B.;
RT      "Cloning of vascular endothelial growth factor (VEGF) cDNA.";
RL      Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.
DR      EMBL: AY047581; AAK95847.1;
DR      InterPro: IPR000072; PD.growth_factor.
DR      Pfam: PF00341; PDGF; 1.
DR      ProDom: PD001629; PD.growth_factor; 1.
DR      PROSITE: PS00249; PDGF.1; 1.
DR      PROSITE: PS0278; PDGF.2; 1.
DR      SEQUENCE 191 AA; 22314 MW; CCE57097DD3779BD CRC64;

Query Match      75.6%; Score 59; DB 4; Length 191;
Best Local Similarity 78.6%; Pred. NO. 0.0037;
Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

```

QY 1 CNSEMRCPPTES 14
 II I IIIIIII
 DB 87 CNDEGLECVPTES 100

RESULT 6

Q95NE5 PRELIMINARY; PRT; 191 AA.
 AC Q95NE5
 DT 01-DEC-2001 (TRENBLrel. 19, Created)
 DT 01-DEC-2001 (TRENBLrel. 19, Last sequence update)
 DT 01-OCT-2002 (TRENBLrel. 22, Last annotation update)
 DE SIMVEGF165.
 GN SIMVEGF165.
 OS Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
 OC Cercopithecoidea; Macaca.
 OX NCBI_TaxID=9541;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=96245208; PubMed=8641836;
 RA Shima D.T., Gougos A., Miller J.W., Tolentino M., Robinson G.,
 RA Adamis A.P., D'Amore P.A.;
 RT "Cloning and mRNA expression of vascular endothelial growth factor in
 RT ischemic retinas of Macaca fascicularis";
 RL Invest. Ophthalmol. Vis. Sci. 37:1334-1340(1996).
 DR EMBL; S82167; AAB47118.1;
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS50278; PDGF_2; 1.
 DR SEQUENCE 191 AA; 22314 MW; CCE57097DD3779BD CRC64;

Query Match 75.6%; Score 59; DB 6; Length 191;
 Best Local Similarity 78.6%; Pred. No. 0.0037;
 Matches 11; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPPTES 14
 II I IIIIIII
 DB 87 CNDEGLECVPTES 100

RESULT 7

Q9YMF3 PRELIMINARY; PRT; 132 AA.
 AC Q9YMF3
 DT 01-MAY-1999 (TRENBLrel. 10, Created)
 DT 01-MAY-1999 (TRENBLrel. 10, Last sequence update)
 DT 01-MAR-2003 (TRENBLrel. 23, Last annotation update)
 DE Vascular endothelial growth factor homolog Vegf-e.
 OS Orf virus.
 OC Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
 OC Parapoxvirus.
 OX NCBI_TaxID=10258;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX STRAIN=D1701;
 RX MEDLINE=99107753; PubMed=9889193;
 RA Meyer M., Clauss M., Lepple-Wienhues A., Waltenberger J.,
 RA Augustin H.G., Ziche M., Lanz C., Buettner M., Rzhiz H.J., Dehio C.;
 RT "A novel vascular endothelial growth factor encoded by orf virus,
 RT VEGF-E, mediates angiogenesis via signalling through VEGFR-2 (KDR) but
 RT not VEGFR-1 (Flt-1) receptor tyrosine kinases";
 RL EMBO J. 18:363-374(1999).
 DR EMBL; AF106020; RAD03735.1;
 DR HSP; P49763; IF2V.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.

DR PROSITE; PS00249; PDGF_1; 1
 DR PROSITE; PS50278; PDGF_2; 1
 SQ SEQUENCE 132 AA; 14763 MW; 15F403A068B72926 CRC64;

Query Match 74.4%; Score 58; DB 12; Length 132;
 Best Local Similarity 71.4%; Pred. No. 0.004;
 Matches 10; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPPTES 14
 II I IIIIIII
 DB 70 CNDEGLECVPTES 83

RESULT 8

Q97500 PRELIMINARY; PRT; 68 AA.
 ID Q97500
 AC Q97500
 DT 01-MAY-1999 (TRENBLrel. 10, Created)
 DT 01-MAY-1999 (TRENBLrel. 10, Last sequence update)
 DT 01-MAR-2003 (TRENBLrel. 23, Last annotation update)
 DE Vascular endothelial growth factor (Fragment).
 GN VEGF.
 OS Oryctolagus cuniculus (Rabbit).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
 OX NCBI_TaxID=9986;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Inoue K., Kawabe Y., Kodama T.;
 RT "Rabbit VEGF cDNA, partial";
 RL Submitted (NOV-1998) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AB020216; BAA36949.1;
 DR HSP; P49763; IF2V.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS50278; PDGF_2; 1.
 FT NON_TER 1
 FT NON_TER 68
 SQ SEQUENCE 68 AA; 7819 MW; 687638661E98DEE0 CRC64;

Query Match 73.1%; Score 57; DB 6; Length 68;
 Best Local Similarity 76.9%; Pred. No. 0.0032;
 Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPPTES 13
 II I IIIIIII
 DB 41 CNDEGLECVPTES 53

RESULT 9

O18843 PRELIMINARY; PRT; 75 AA.
 ID O18843
 AC O18843
 DT 01-JAN-1998 (TRENBLrel. 05, Created)
 DT 01-JAN-1998 (TRENBLrel. 05, Last sequence update)
 DT 01-MAR-2003 (TRENBLrel. 23, Last annotation update)
 DE Vascular endothelial growth factor (Fragment).
 GN VEGF.
 OS Oryctolagus cuniculus (Rabbit).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
 OX NCBI_TaxID=9986;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=NEW ZEALAND WHITE; TISSUE=Skeletal muscle;
 RX MEDLINE=98191144; PubMed=9530113;
 RA Skorjanc D., Jaschinski F., Heine G., Pette D.;
 RT "Sequential increases in capillarization and mitochondrial enzymes in
 RT low-frequency-stimulated rabbit muscle.";
 RL Am. J. Physiol. 274:C810-C818(1998).

```

DR EMBL; AF022179; AAC15469.1; --
DR HSSP; P49763; 1FZV.
DR InterPro; IPR002400; GF_cysknot.
DR Pfam; PF00341; PDGF_1.
DR PRINTS; PR00438; GFCYSKNOT.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS0278; PDGF_2; 1.
FT NON_TER 1
FT NON_TER 75
SQ SEQUENCE 75 AA; 8720 MW; DDCE2C5B29B69359 CRC64;

Query Match 73.1%; Score 57; DB 6; Length 75;
Best Local Similarity 76.9%; Pred. No. 0.0036;
Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPVTEE 13
DB 29 CNDESLECPTEE 41

RESULT 10
Q9NIS2 PRELIMINARY; PRT; 78 AA.
AC Q9NIS2;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor isoform 121 (Fragment).
GN VEGF.
OS Capreolus capreolus (Roe deer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervioidea;
OC Cervidae; Odocoileinae; Capreolus.
OX NCBI_TaxID=9858;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Testis;
RX MEDLINE-20532861; PubMed-11078967;
RA Wagener A., Blotner S., Goritz F., Fickel J.;
RT "Detection of growth factors in the testis of roe deer (Capreolus capreolus).";
RL Anim. Reprod. Sci. 64:65-75(2000).
DR EMBL; AF152593; AAF73232.1; --
DR HSSP; P49763; 1FZV.
DR InterPro; IPR002400; GF_cysknot.
DR Pfam; PF00341; PDGF; 1.
DR PRINTS; PR00438; GFCYSKNOT.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS0278; PDGF_2; 1.
FT NON_TER 1
FT NON_TER 78
SQ SEQUENCE 78 AA; 9131 MW; 7EE20DFFFC17847C CRC64;

Query Match 73.1%; Score 57; DB 6; Length 78;
Best Local Similarity 76.9%; Pred. No. 0.0037;
Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPVTEE 13
DB 25 CNDESLECPTEE 37

RESULT 11
Q9MZB1 PRELIMINARY; PRT; 118 AA.
ID Q9MZB1
AC Q9MZB1
DT 01-OCT-2000 (TREMBlrel. 15, Created)

```

```

DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor (Fragment).
GN VEGF.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovioidea;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Placental artery endothelium;
RA Zheng J., Tsol S.C., Magness R.R.;
RT "Growth factor expression in ovine fetal placental artery endothelial cells.";
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF250375; AAF75258.1;
DR HSSP; P49763; 1FZV.
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS0278; PDGF_2; 1.
FT NON_TER 1
FT NON_TER 123
SQ SEQUENCE 118 AA; 13931 MW; 757DC53AA56378A6 CRC64;

Query Match 73.1%; Score 57; DB 6; Length 118;
Best Local Similarity 76.9%; Pred. No. 0.0055;
Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMRCPVTEE 13
DB 58 CNDESLECPTEE 70

RESULT 12
Q9NIS1 PRELIMINARY; PRT; 123 AA.
ID Q9NIS1
AC Q9NIS1;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor isoform 165 (Fragment).
GN VEGF.
OS Capreolus capreolus (Roe deer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervioidea;
OC Cervidae; Odocoileinae; Capreolus.
OX NCBI_TaxID=9858;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Testis;
RX MEDLINE-20532861; PubMed-11078967;
RA Wagener A., Blotner S., Goritz F., Fickel J.;
RT "Detection of growth factors in the testis of roe deer (Capreolus capreolus).";
RL Anim. Reprod. Sci. 64:65-75(2000).
DR EMBL; AF152594; AAF73233.1; --
DR HSSP; P49763; 1FZV.
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS0278; PDGF_2; 1.
FT NON_TER 1
FT NON_TER 123
SQ SEQUENCE 123 AA; 14354 MW; 0A756F54105A4CE1 CRC64;

Query Match 73.1%; Score 57; DB 6; Length 123;
Best Local Similarity 76.9%; Pred. No. 0.0058;
Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

```

QY 1 CNSEMECVPTTEE 13
II I IIIIIII
Db 25 CNDELECVPTTEE 37

RESULT 13

Q8MJ86 PRELIMINARY; PRT; 131 AA.
AC Q8MJ86;
DT 01-OCT-2002 (TREMBlrel. 22, Created)
DT 01-OCT-2002 (TREMBlrel. 22, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor-3 (Fragment).
OS Capreolus capreolus (Roe deer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoidae;
OC Cervidae; Odocolleinae; Capreolus.
OX NCBI_TaxID=9858;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-Testis;
RA Wagener A., Fickel J.;
RT "Detection of VEGF in roe deer testis."
RL Submitted (MAY-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF514284; AAM49789.1;
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS50278; PDGF_2; 1.
FT NON_TER 1
FT NON_TER 131
SQ SEQUENCE 131 AA; 15358 MW; 99719A58EEAC7FCA CRC64;

Query Match 73.1%; Score 57; DB 6; Length 131;
Best Local Similarity 76.9%; Pred. No. 0.0061;
Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMECVPTTEE 13
II I IIIIIII
Db 3 CNDELECVPTTEE 15

RESULT 14

Q77643 PRELIMINARY; PRT; 190 AA.
AC Q77643;
DT 01-NOV-1998 (TREMBlrel. 08, Created)
DT 01-NOV-1998 (TREMBlrel. 08, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor
GN VEGF.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidae;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=Columbia-Rambouillet;
RA Cheung C.Y., Brace R.A.;
RT "Ovine vascular endothelial growth factor: Nucleotide sequence and expression in fetal tissues."
RL Growth factors 0:0-0(1998).
DR EMBL; AF071015; AAC23608.1;
DR HSSP; P49763; IFZV.
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.

SQ SEQUENCE 190 AA; 22342 MW; 0D5E3B3E5C53E739 CRC64;

Query Match 73.1%; Score 57; DB 6; Length 190;
Best Local Similarity 76.9%; Pred. No. 0.0088;
Matches 10; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CNSEMECVPTTEE 13
II I IIIIIII
Db 86 CNDELECVPTTEE 98

RESULT 15

O88911 PRELIMINARY; PRT; 110 AA.
AC O88911;
DT 01-NOV-1998 (TREMBlrel. 08, Created)
DT 01-NOV-1998 (TREMBlrel. 08, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor A 110 (Fragment).
GN VEGF.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=Sprague-Dawley; TISSUE=Penis;
RX MEDLINE-99115228; PubMed-9916007;
RA Burchardt M., Burchardt T., Chen M.W., Shabsigh A., de la Taille A., Buttyan R., Shabsigh R.;
RT "Expression of messenger ribonucleic acid splice variants for vascular endothelial growth factor in the penis of adult rats and humans."
RL Biol. Reprod. 60:398-404(1999).
DR EMBL; AF080594; AAC36708.1;
DR HSSP; P49763; IFZV.
DR InterPro; IPR002400; GF_cysknot.
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR PRINTS; PR00438; GFCYSKNOT.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
FT NON_TER 1
FT NON_TER 1
SQ SEQUENCE 110 AA; 12713 MW; B81B79AC08D89F06 CRC64;

Query Match 71.8%; Score 56; DB 11; Length 110;
Best Local Similarity 71.4%; Pred. No. 0.008;
Matches 10; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 CNSEMECVPTTES 14
II I IIIIIII
Db 60 CNDELECVPTSES 73

Search completed: July 24, 2003 14:47:23
Job time : 26.7059 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:08:24 Search time 68.2353 Seconds
(without alignments)
46.523 Million cell updates/sec

Title: PEP2

Perfect score: 110
Sequence: 1 HHEVVKFEDVLRSSCHPIE 20

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 1107863 seqs, 158726573 residues

Total number of hits satisfying chosen parameters: 1107863

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database: A_Geneseq_19Jun03.*

Result No.	Score	Query Match	Length	ID	Description
1	110	100.0	191	21 AAB28233	Mutant human VEGF
2	95	86.4	191	21 AAB28235	Mutant human VEGF
3	93	84.5	191	21 AAB28236	Mutant human VEGF
4	88	80.0	54	22 AA08422	Polypeptide encode
5	88	80.0	101	24 AAE32330	Human VEGF-A recep
6	88	80.0	102	22 AA08484	VEGFR-1 binding ep
7	88	80.0	105	22 AA08407	Polypeptide encode
8	88	80.0	105	22 AA08411	Polypeptide encode
9	88	80.0	105	22 AA08420	Polypeptide encode

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	110	100.0	191	21 AAB28233	Mutant human VEGF
2	95	86.4	191	21 AAB28235	Mutant human VEGF
3	93	84.5	191	21 AAB28236	Mutant human VEGF
4	88	80.0	54	22 AA08422	Polypeptide encode
5	88	80.0	101	24 AAE32330	Human VEGF-A recep
6	88	80.0	102	22 AA08484	VEGFR-1 binding ep
7	88	80.0	105	22 AA08407	Polypeptide encode
8	88	80.0	105	22 AA08411	Polypeptide encode
9	88	80.0	105	22 AA08420	Polypeptide encode

10	88	80.0	105	22 AA08467	Polypeptide encode
11	88	80.0	110	21 AAY69417	Amino acid sequenc
12	88	80.0	110	21 AAY83038	Human vascular end
13	88	80.0	110	22 AAG79276	Primary sequence o
14	88	80.0	110	22 AAB50436	Human VEGF110 Ho
15	88	80.0	110	23 ABB76304	Human vascular end
16	88	80.0	121	12 AAR11385	Human vascular end
17	88	80.0	121	14 AAR42607	Human VEGF-121. H
18	88	80.0	121	17 AA090901	Human VEGF/VPF121
19	88	80.0	121	17 AA03677	Vascular permeabil
20	88	80.0	121	17 AAR96043	Human vascular per
21	88	80.0	121	17 AAR93977	Vascular permeabil
22	88	80.0	121	19 AA040597	VEGF/VPF121. Homo
23	88	80.0	121	20 AAY23943	Amino acid sequenc
24	88	80.0	121	20 AAY08278	Human growth facto
25	88	80.0	121	21 AAY99848	Human vascular end
26	88	80.0	121	22 AAB50428	Mature human vascu
27	88	80.0	121	24 ABB84619	Human VEGF121 mono
28	88	80.0	121	24 AAE32329	Human vascular end
29	88	80.0	126	22 AA08403	Polypeptide encode
30	88	80.0	126	22 AA08408	Polypeptide encode
31	88	80.0	126	22 AA08409	Polypeptide encode
32	88	80.0	126	22 AA08410	Polypeptide encode
33	88	80.0	126	22 AA08412	Polypeptide encode
34	88	80.0	126	22 AA08413	Polypeptide encode
35	88	80.0	126	22 AA08414	Polypeptide encode
36	88	80.0	128	22 AA08404	Polypeptide encode
37	88	80.0	128	22 AA08415	Polypeptide encode
38	88	80.0	128	22 AA08416	Polypeptide encode
39	88	80.0	128	22 AA08417	Polypeptide encode
40	88	80.0	128	22 AA08418	Polypeptide encode
41	88	80.0	128	22 AA08419	Polypeptide encode
42	88	80.0	128	22 AA08421	Polypeptide encode
43	88	80.0	141	24 ABB71756	Human vascular end
44	88	80.0	145	19 AAW56693	Vascular endothell
45	88	80.0	145	20 AAY08279	Human growth facto

ALIGNMENTS

RESULT 1	
AAB28233	
ID	AAB28233 standard; Protein: 191 AA.
XX	
AC	AAB28233;
XX	
DT	13-FEB-2001 (first entry)
DE	Mutant human VEGF #1.
XX	
KW	Human; vascular endothelial growth factor; VEGF; mutain; mutation;
KW	kinase domain region receptor; KDR; vasculogenesis; angiogenesis;
KW	surgical incision; wound; laceration; blood vessel; ulcer.
XX	
OS	Homo sapiens.
OS	Synthetic.
XX	
FH	Key Location/Qualifiers
FT	Misc-difference 44 /note= "Wild-type Met substituted by Glu"
FT	Misc-difference 47 /note= "Wild-type Tyr substituted by Leu"
FT	Misc-difference 48 /note= "Wild-type Gln substituted by Arg"
FT	Misc-difference 51 /note= "Wild-type Tyr substituted by Ser"
PN	WO200063380-A1.
XX	
PD	26-OCT-2000.
XX	
PF	10-APR-2000; 2000WO-US09483.

16-APR-1999; 99US-0129788.
23-FEB-2000; 2000US-0184235.
(GETH) GENENTECH INC.
Cunningham B, Abraham D, Li B;
WPI; 2000-672736/65.
Vascular endothelial growth factor variant useful for detecting kinase domain region receptor for diagnostic purposes, comprises one or more amino acid mutations in native VEGF and has selective binding affinity for the receptor
Claim 4; Page -: 70pp; English.
The present invention relates to mutant human vascular endothelial growth factor (VEGF) proteins (AAB28233-B28236). The present sequence is one such mutant. The mutant VEGF proteins have selective binding affinity for kinase domain region (KDR) receptor. The mutant VEGF proteins are useful for detecting KDR receptors for diagnostic purposes. In addition, the mutant VEGF proteins are useful for stimulating vasculogenesis or angiogenesis by exposing mammalian cells expressing a KDR receptor to the mutant proteins to treat trauma to the vascular network caused by surgical incisions, wounds, lacerations, penetration of blood vessels and surface ulcers.
CC Note: the present sequence is not shown in the specification but is derived from the wild-type human VEGF sequence given in Fig 1.
Sequence 191 AA;
Query Match 100.0%; Score 110; DB 21; Length 191;
Best Local Similarity 100.0%; Pred. No. 6.4e-10;
Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0
QY. 1 HHEVVKFEDVLRSSCHPIE 20
Db 37 HHEVVKFEDVLRSSCHPIE 56
RESULT 2
AAB28235
ID AAB28235 standard; Protein; 191 AA.
XX AAB28235;
XX
XX
XX 13-FEB-2001 (first entry)
XX
XX Mutant human VEGF #3.
XX
XX Human; vascular endothelial growth factor; VEGF; mutein; mutation;
XX Kinase domain region receptor; KDR; vasculogenesis; angiogenesis;
XX surgical incision; wound; laceration; blood vessel; ulcer.
XX
XX Homo sapiens.
XX Synthetic.
XX
XX
XX Key Location/Qualifiers
FH Misc-difference 44
FT /note= "Wild-type Met substituted by Glu"
FT Misc-difference 89
FT /note= "Wild-type Asp substituted by Ser"
FT Misc-difference 91
FT /note= "Wild-type Gly substituted by Met"
FT Misc-difference 92
FT /note= "Wild-type Leu substituted by Arg"
XX
XX WO200063380-A1.
XX
XX
XX 26-OCT-2000.
XX
XX 10-APR-2000; 2000WO-US09483.

XX PR 16-APR-1999; 99US-0129788.
 PR 23-FEB-2000; 2000US-0184235.
 XX PA (GETH) GENENTECH INC.
 XX PI Cunningham B, Abraham D, Li B;
 XX WPI; 2000-672736/65.
 DR Vascular endothelial growth factor variant useful for detecting kinase
 PT domain region receptor for diagnostic purposes, comprises one or more
 PT amino acid mutations in native VEGF, and has selective binding affinity
 XX for the receptor
 XX Claim 7; Page -: 70pp; English.
 XX The present invention relates to mutant human vascular endothelial
 CC growth factor (VEGF) proteins (AAB28233-B28236). The present sequence is
 CC one such mutant. The mutant VEGF proteins have selective binding affinity
 CC for kinase domain region (KDR) receptor. The mutant VEGF proteins are
 CC useful for detecting KDR receptors for diagnostic purposes. In addition,
 CC the mutant VEGF proteins are useful for stimulating vasculogenesis or
 CC angiogenesis by exposing mammalian cells expressing a KDR receptor to
 CC the mutant proteins to treat trauma to the vascular network caused by
 CC surgical incisions, wounds, lacerations, penetration of blood vessels
 CC and surface ulcers.
 CC Note: the present sequence is not shown in the specification but is
 CC derived from the wild-type human VEGF sequence given in Fig 1.
 XX SQ Sequence 191 AA;
 Query Match 84.5%; Score 93; DB 21; Length 191;
 Best Local Similarity 85.0%; Pred. No. 3.9e-07;
 Matches 17; Conservative 1; Mismatches 2; Indels 0; Gaps 0;
 OY 1 HHEVVKFEDVLRSSCHPIE 20
 Db 37 HHEVVKFMDVLRQSYCHPIE 56
 RESULT 4
 AAU08422
 ID AAU08422 standard; Protein; 54 AA.
 AC AAU08422;
 XX 21-NOV-2001 (first entry)
 DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 12-16.
 KW -human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
 KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
 KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
 KW cardiovascular; VEGF-C; mutant; mutein.
 XX Homo sapiens.
 OS Synthetic.
 XX Key Location/Qualifiers
 FH Domain 1..54
 FT /note= "VEGF receptor binding domain"
 FT
 PN WO200162942-A2.
 XX 30-AUG-2001.
 PD
 XX 26-FEB-2001; 2001WO-US06113.
 PF
 XX 25-FEB-2000; 2000US-0185205.
 PR 18-MAY-2000; 2000US-0205331.
 XX (LUDW-) LUDWIG INST CANCER RES.
 PA

PA (LICN) LICENTIA OY.
 XX Alitalo K, Jeltsch MM;
 XX WPI; 2001-536640/59.
 DR N-PSDB; AAS12859..
 XX Polypeptides that bind cellular receptors for vascular endothelial
 PT growth factors, polynucleotides encoding them
 XX Example 3; Page 200; 261pp; English.
 PS The present invention relates to polypeptides that bind cellular
 XX receptors for vascular endothelial growth factors (VEGFs), the
 CC polynucleotides encoding them, and their use for identifying agents that
 CC modulate interactions between VEGFs and their receptors. VEGFs and their
 CC receptors play an important role in vasculogenesis, the development of
 CC the embryonic vasculature from early differentiating endothelial cells
 CC and angiogenesis, the process of forming new blood vessels from
 CC pre-existing ones. Modulators of interactions between VEGF and its
 CC receptors may be used to treat dysfunction of the endothelial cell
 CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
 CC proliferative retinopathies, age-related macular degeneration, rheumatoid
 CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
 CC receptor binding profiles compared to known naturally occurring VEGFs.
 CC The present sequence represents the polypeptide encoded by human
 CC VEGF-A/VEGF-C hybrid construct clone 12-16.
 XX SQ Sequence 54 AA;
 Query Match 80.0%; Score 88; DB 22; Length 54;
 Best Local Similarity 80.0%; Pred. No. 6.2e-07;
 Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
 OY 1 HHEVVKFEDVLRSSCHPIE 20
 Db 4 HHEVVKFMDVLRQSYCHPIE 23
 RESULT 5
 AAE32330
 ID AAE32330 standard; Protein; 101 AA.
 XX AAE32330;
 XX 24-MAR-2003 (first entry)
 DT Human VEGF-A receptor binding domain.
 DE Vascular endothelial growth factor; VEGF; angiogenesis; wound healing;
 KW bone growth; osteoporosis; osteoarthritis; bone reconstruction; ulcer;
 KW lesion; injury; trauma; periodontal condition; protein therapy; human.
 XX Homo sapiens.
 OS WO200283851-A2.
 XX 24-OCT-2002.
 PD
 XX 10-APR-2002; 2002WO-US11406.
 PF
 XX 10-APR-2001; 2001US-0832355.
 PR (GENV-) GENVEC INC.
 XX Kovesdi I, Kessler PD;
 PI WPI; 2003-075536/07.
 XX New fusion protein comprising a non-heparin-binding vascular
 PT endothelial growth factor (VEGF) peptide portion and a non-VEGF peptide
 PT portion, useful for promoting angiogenesis and/or bone growth in
 PT mammals

XX PS Disclosure; Page 118-119; 191pp; English.

XX CC The invention relates to a fusion protein comprising non-heparin binding

XX CC vascular endothelial growth factor (VEGF) peptide portion and a non-VEGF

XX CC peptide portion useful for promoting angiogenesis and/or bone growth in

XX CC mammalian host. The fusion protein is useful for promoting angiogenesis,

XX CC wound healing and bone growth. Compositions containing bone growth

XX CC promoting fusion protein can be used to treat osteoporosis, rheumatoid

XX CC or osteoarthritis, to improve poor bone healing, to promote implant

XX CC integration and function of artificial joints and to facilitate bone

XX CC reconstruction. They can also be used to treat e.g. ulcers, lesions,

XX CC injuries, burns, trauma, periodontal conditions, lacerations and other

XX CC conditions. The invention is also useful in protein therapy. The present

XX CC sequence is human VEGF-A receptor binding domain.

XX SQ Sequence 101 AA;

Query Match 80.0%; Score 88; DB 24; Length 101;

Best Local Similarity 80.0%; Pred. NO. 1.2e-06;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

OY 1 HHEVVKFEDVLRSSCHPIE 20

DB 3 HHEVVKFMDVYQSYCHPIE 22

RESULT 6

AAU08484

ID AAU08484 standard; Peptide: 102 AA.

AC AAU08484;

XX 21-NOV-2001 (first entry)

XX VEGFR-1 binding epitope from human VEGF-A.

XX Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;

XX angiogenesis; blood vessel; cancer; proliferative retinopathy;

XX psoriasis; age-related macular degeneration; rheumatoid arthritis;

XX cardiovascular; VEGFR-1.

XX Homo sapiens.

XX WO200162942-A2.

XX 30-AUG-2001.

XX 26-FEB-2001; 2001WO-US06113.

XX 25-FEB-2000; 2000US-0185205.

XX 18-MAY-2000; 2000US-0205331.

XX (LUDW-) LUDWIG INST CANCER RES.

XX (LICN) LICENTIA OY.

XX Alitalo K, Jeltsch MM;

XX WPI; 2001-536640/59.

XX Polypeptides that bind cellular receptors for vascular endothelial

XX growth factors, polynucleotides encoding them -

XX Example 4; Page 115; 261pp; English.

XX The present invention relates to polypeptides that bind cellular

XX receptors for vascular endothelial growth factors (VEGFs), the

XX polynucleotides encoding them, and their use for identifying agents that

XX modulate interactions between VEGFs and their receptors. VEGFs and their

XX receptors play an important role in vasculogenesis, the development of

XX the embryonic vasculature from early differentiating endothelial cells

XX and angiogenesis, the process of forming new blood vessels from

XX pre-existing ones. Modulators of interactions between VEGF and its

XX regulatory system. Such disorders include cancers, abnormal angiogenesis,

XX receptors may be used to treat dysfunction of the endothelial cell

XX regulatory system. Such disorders include cancers, abnormal angiogenesis,

XX proliferative retinopathies, age-related macular degeneration, rheumatoid

XX arthritis and psoriasis. The polypeptides of the invention exhibit unique

XX receptor binding profiles compared to known naturally occurring VEGFs.

XX The present sequence represents VEGFR-1 binding epitope from human

XX VEGF-A.

XX SQ Sequence 102 AA;

Query Match 80.0%; Score 88; DB 22; Length 102;

Best Local Similarity 80.0%; Pred. NO. 1.3e-06;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

OY 1 HHEVVKFEDVLRSSCHPIE 20

DB 4 HHEVVKFMDVYQSYCHPIE 23

RESULT 7

AAU08407

ID AAU08407 standard; Protein: 105 AA.

XX AAU08407;

XX 21-NOV-2001 (first entry)

XX Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 12-1.

XX Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;

XX angiogenesis; blood vessel; cancer; proliferative retinopathy;

XX psoriasis; age-related macular degeneration; rheumatoid arthritis;

XX cardiovascular; VEGF-C; mutant; mutein.

XX Homo sapiens.

XX Synthetic.

XX Key Location/Qualifiers

FT Domain 1..102

FT /note= "VEGF receptor binding domain"

XX WO200162942-A2.

XX 30-AUG-2001.

XX 26-FEB-2001; 2001WO-US06113.

XX 25-FEB-2000; 2000US-0185205.

XX 18-MAY-2000; 2000US-0205331.

XX (LUDW-) LUDWIG INST CANCER RES.

XX (LICN) LICENTIA OY.

XX Alitalo K, Jeltsch MM;

XX WPI; 2001-536640/59.

XX N-PSDB; AAS12844.

XX Polypeptides that bind cellular receptors for vascular endothelial

XX growth factors, polynucleotides encoding them -

XX Claim 35; Page 182; 261pp; English.

XX The present invention relates to polypeptides that bind cellular

XX receptors for vascular endothelial growth factors (VEGFs), the

XX polynucleotides encoding them, and their use for identifying agents that

XX modulate interactions between VEGFs and their receptors. VEGFs and their

XX receptors play an important role in vasculogenesis, the development of

XX the embryonic vasculature from early differentiating endothelial cells

XX and angiogenesis, the process of forming new blood vessels from

XX pre-existing ones. Modulators of interactions between VEGF and its

XX regulatory system. Such disorders include cancers, abnormal angiogenesis,

CC VEGF-A/VEGF-C hybrid construct clone, 12-14.
 XX
 SQ Sequence 105 AA;
 Query Match 80.0%; Score 88; DB 22; Length 105;
 Best Local Similarity 80.0%; Pred. No. 1.3e-06;
 Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

OY 1 HHEVVKFEDVLRSSCHPIE 20
 DB 4 HHEVVKFMDVYQSYCHPIE 23
 ||||| | : | | | | |
 ||||| | : | | | | |

RESULT 10
 AAU08467
 ID AAU08467 standard; Protein; 105 AA.
 XX
 AC AAU08467;
 XX
 DT 21-NOV-2001 (first entry)
 XX
 DE Polypeptide encoded by human VEGF-A/VEGF-C hybrid clone 14-9.
 XX
 KW Human; vascular endothelial growth factor; VEGF-A; vasculogenesis;
 KW angiogenesis; blood vessel; cancer; proliferative retinopathy;
 KW psoriasis; age-related macular degeneration; rheumatoid arthritis;
 KW cardiovascular; VEGF-C; mutant; mutin.
 XX
 OS Homo sapiens.
 OS Synthetic.
 OS
 PN WO200162942-A2.
 XX
 PD 30-AUG-2001.
 XX
 PF 26-FEB-2001; 2001WO-US06113.
 XX
 PR 25-FEB-2000; 2000US-0185205.
 PR 18-MAY-2000; 2000US-0205331.
 XX
 PA (LUDW-) LUDWIG INST CANCER RES.
 PA (LICN) LICENTIA OY.
 XX
 PI Alitalo K, Jeltsch MM;
 DR WPI; 2001-536640/59.
 DR N-PSDB; AAS12886.
 XX
 PT Polypeptides that bind cellular receptors for vascular endothelial
 PT growth factors, polynucleotides encoding them -
 XX
 PS Claim 42; Page 249; 26lpp; English.
 CC The present invention relates to polypeptides that bind cellular
 CC receptors for vascular endothelial growth factors (VEGFs), the
 CC polynucleotides encoding them, and their use for identifying agents that
 CC modulate interactions between VEGFs and their receptors. VEGFs and their
 CC receptors play an important role in vasculogenesis, the development of
 CC the embryonic vasculature from early differentiating endothelial cells
 CC and angiogenesis, the process of forming new blood vessels from
 CC pre-existing ones. Modulators of interactions between VEGF and its
 CC receptors may be used to treat dysfunction of the endothelial cell
 CC regulatory system. Such disorders include cancers, abnormal angiogenesis,
 CC proliferative retinopathies, age-related macular degeneration, rheumatoid
 CC arthritis and psoriasis. The polypeptides of the invention exhibit unique
 CC receptor binding profiles compared to known naturally occurring VEGFs.
 CC The present sequence represents the polypeptide encoded by human
 CC VEGF-A/VEGF-C hybrid construct clone 14-9.
 XX
 SQ Sequence 105 AA;
 Query Match 80.0%; Score 88; DB 22; Length 105;
 Best Local Similarity 80.0%; Pred. No. 1.3e-06;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

OY 1 HHEVVKFEDVLRSSCHPIE 20
 DB 4 HHEVVKFMDVYQSYCHPIE 23
 ||||| | : | | | | |
 ||||| | : | | | | |

RESULT 11
 AAY69417
 ID AAY69417 standard; Protein; 110 AA.
 XX
 AC AAY69417;
 XX
 DT 03-JUL-2000 (first entry)
 XX
 DE Amino acid sequence of vascular endothelial growth factor 110.
 XX
 KW Human; vascular endothelial growth factor; VEGF 110; angiogenic factor;
 KW blood vessel injury; vascular injury; microvascular angiopathy;
 KW thrombotic microangiopathy; kidney disease; haemolytic uremic syndrome;
 KW toxic shock syndrome; venom; hypercoagulable state; platelet activation;
 KW platelet aggregation; thrombosis; preclampsia; sepsis; pancreatitis;
 KW intravascular coagulation; thrombotic thrombocytopenia purpura;
 KW acute renal failure; myocardial infarction; ischemic bowel disease;
 KW stroke; hypoxia; hypercapnia; fibrosis; toxic alveolar injury;
 KW acute respiratory distress syndrome; pneumonia; pulmonary emboli;
 KW birth prematurity disorder; wound; allergy; hypersensitivity;
 KW autoimmune disease; organ transplant; focal glomerulosclerosis;
 KW amyloidosis.
 XX
 OS Homo sapiens.
 OS
 PN WO200013702-A2.
 XX
 PD 16-MAR-2000.
 XX
 PF 09-SEP-1999; 99WO-US20480.
 XX
 PR 09-SEP-1998; 98US-0099694.
 PR 26-MAR-1999; 99US-0126406.
 PR 27-MAR-1999; 99US-0126615.
 XX
 PA (SCIO-) SCIOS INC.
 XX
 PI Schreiner GF, Johnson RJ;
 DR WPI; 2000-256861/22.
 XX
 PT Novel methods and compositions for the prevention and treatment of
 PT microvascular angiopathies by administration of angiogenic factors such
 PT as vascular endothelial growth factor (VEGF)
 XX
 PS Disclosure; Fig 12; 46pp; English.
 CC The present sequence represents native human vascular endothelial growth
 CC factor (VEGF) 110. VEGF is an angiogenic factor. VEGF proteins are used
 CC for the prevention or repair of injury to blood vessels or associated
 CC nonvascular tissues (served by the blood vessels) and for the prevention
 CC and repair of vascular injury associated with microvascular angiopathy,
 CC particularly thrombotic microangiopathy. The proteins methods may also
 CC be used for the prevention and treatment of kidney diseases associated
 CC with injury to, or atrophy of, the vasculature of the glomerulus and
 CC interstitium. Conditions which may be treated include haemolytic uric
 CC syndrome, toxic shock syndrome, venom exposure, chemical exposure,
 CC hypercoagulable states, platelet activation or aggregation, thrombosis,
 CC preclampsia, thrombotic thrombocytopenia purpura, disseminated
 CC intravascular coagulation, sepsis, pancreatitis, acute renal failure,
 CC myocardial infarction, ischemic bowel disease, transient ischemic
 CC attacks, stroke, hypoxia or hypercapnia or fibrosis arising from lung
 CC endothelium injury, acute respiratory distress syndrome, toxic alveolar
 CC injury, pneumonia, pulmonary emboli, birth prematurity disorders,
 CC wounds, allergic reactions, hypersensitivity, autoimmune diseases, organ
 CC transplants, focal glomerulosclerosis, and amyloidosis.

xx
SQ Sequence 110 AA;
Query Match 80.08; Score 88; DB 21; Length 110;
Best Local Similarity 80.08; Pred. No. 1.4e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
OY 1 HHEVVKFEDVLRSSCHPIE 20
DB 11 HHEVVKFEDVLRSSCHPIE 30
RESULT 12
ID AAY83038 standard; Protein; 110 AA.
XX AC AAY83038;
XX DT 04-JUL-2000 (first entry)
XX DE Human vascular endothelial growth factor (hVEGF110).
XX KW Vascular endothelial growth factor; human; angiogenesis; VEGF;
KW capillary formation; hypertension; treatment; kidney; CNS; stroke;
KW meningitis; central nervous system; tumour; infection; bone growth;
KW hypoxia; hypercapnia; fibrosis; inflammatory bowel disease;
KW diarrhoea; allografts; cardiac valve.
XX OS Homo sapiens.
XX PN WO200013703-A2.
XX PD 16-MAR-2000.
XX PF 09-SEP-1999; 99WO-US20481.
XX PR 09-SEP-1998; 98US-0099694.
XX PR 26-MAR-1999; 99US-0126406.
XX PR 27-MAR-1999; 99US-0126615.
XX PA (SCIO-) SCIOS INC.
XX PI Schreiner GF, Johnson RJ;
XX DR WPI; 2000-256862/22.
XX PT Novel methods for treating hypertension by administering a factor which
PT increases angiogenesis and/or vascular permeability
XX PS Disclosure; Figure 11; 51pp; English.
XX CC Administering vascular endothelial growth factor (VEGF) can be used
CC for treating hypertension (especially salt-dependent hypertension)
CC Administering VEGF promotes angiogenesis and/or vascular or
CC capillary permeability. The method is also useful in treating
CC disorders related to abnormal transport of solutes across endothelial
CC cells. Such disorders include the treatment or prevention of kidney
CC disease associated with impaired filtration or excretion of solutes;
CC the treatment or prevention of diseases of the central nervous system
CC associated with alterations in cerebrospinal fluid, e.g. stroke,
CC meningitis, tumour, infections, and bone growth disorders; treatment
CC or prevention of hypoxia or hypercapnia or fibrosis arising from
CC accumulation of fluid secretions in the lungs, e.g. acute respiratory
CC distress syndrome, toxic alveolar injury, pneumonia, infections,
CC surgical intervention, cystic fibrosis; treatment or prevention of
CC pulmonary dysfunction arising from injury to the pulmonary
CC endothelium, including disorders arising from premature birth, and
CC pulmonary hypertension; treatment or prevention of disease arising
CC from disordered transport of fluid and solutes across the intestinal
CC epithelium, e.g. inflammatory bowel disease, diarrhoea; treatment or
CC prevention of ascites accumulation in the peritoneum; enhancement of
CC efficacy of solute flux; preservation or enhancement of function of
CC organ allografts; and treatment of cardiac valve disease. This

CC sequence is the native human vascular endothelial growth
CC factor hVEGF110. The activity of VEGF is mediated by interaction
CC with specific receptors on target tissues, most notably the vascular
CC endothelium. VEGF exists as five different length monomer chains due
CC to alternative splicing of the VEGF RNA transcript.
XX SQ Sequence 110 AA;
Query Match 80.08; Score 88; DB 21; Length 110;
Best Local Similarity 80.08; Pred. No. 1.4e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
OY 1 HHEVVKFEDVLRSSCHPIE 20
DB 11 HHEVVKFEDVLRSSCHPIE 30
RESULT 13
ID AAG79276 standard; peptide; 110 AA.
XX AC AAG79276;
XX DT 03-JAN-2002 (first entry)
XX DE Primary sequence of vascular endothelial growth factor (VEGF).
XX KW Kinase domain receptor; KDR; vascular endothelial growth factor; VEGF;
KW VEGF antibody; angiogenesis; cancer; diabetic retinopathy; psoriasis;
KW hemangioblastoma; Kaposi's sarcoma.
XX OS Unidentified.
XX PN WO200172829-A2.
XX PD 04-OCT-2001.
XX PF 29-MAR-2001; 2001WO-IB00577.
XX PR 31-MAR-2000; 2000US-193396P.
XX PA (INSP) INST PASTEUR.
PA (CNRS) CNRS CENT NAT RECH SCI.
PA (UYPA) UNIV PARIS 13 NORD.
XX PI Tournaire R, Demangel C, Derbin C, Perret G, Mazie J, Plouet J;
PI Vassy R;
XX DR WPI; 2001-616471/71.
XX PT Novel peptides inhibiting binding of vascular endothelial growth factor
PT (VEGF) to kinase domain receptor, or inhibiting binding of anti-VEGF
PT antibody to VEGF, useful for treating diabetic retinopathy and
PT psoriasis
XX PS Example; page 21; 55pp; English.
XX CC The present sequence represents vascular endothelial growth factor
CC (VEGF). The specification describes peptides which bind to an
CC anti-VEGF antibody or which bind to a kinase domain receptor (KDR).
CC The peptides inhibit the binding of VEGF to KDR, and inhibit binding
CC of anti-VEGF antibody to VEGF. The peptides are useful for inhibiting
CC angiogenesis and for treating diseases including cancer, diabetic
CC retinopathy, psoriasis, hemangioblastoma, and Kaposi's sarcoma.
XX SQ Sequence 110 AA;
Query Match 80.08; Score 88; DB 22; Length 110;
Best Local Similarity 80.08; Pred. No. 1.4e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
OY 1 HHEVVKFEDVLRSSCHPIE 20
DB 11 HHEVVKFEDVLRSSCHPIE 30

Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 14
AAB50436
ID AAB50436 standard; Protein; 110 AA.

XX AC AAB50436;
XX DT 13-MAR-2001 (first entry)
XX DE Human VEGF110.
XX KW Human; VEGF; vascular endothelial growth factor; VEGF121; VEGF145;
KW cardiant; cerebroprotective; hypotensive; nephrotropic; antidiabetic;
KW dermatological; immunosuppressive; antiinflammatory; cytostatic;
KW vasotrophic; antibacterial; angiogenesis; vascular remodelling;
KW vascular disease; kidney disease; diabetes; systemic lupus erythematosus;
KW meningitis; tumour; infection; lung disease inflammatory bowel disease.
XX OS Homo sapiens.
XX PN WO200071713-A1.
XX PD 30-NOV-2000.
XX PF 18-MAY-2000; 2000WO-US13536.
XX PR 20-MAY-1999; 99US-0135312.
XX PA (SCIO-) SCIOS INC.
XX PI Pollitt NS, Abraham JA;
XX DR WPI; 2001-025162/03.
XX PT Enhancing biological activity of vascular endothelial growth factor by
PT replacing a Cys residue, for producing variant useful for treating
PT hypertension, stroke, diabetes, lupus, glomerulonephritis, meningitis,
PT tumor, pneumonia, infections
XX PS Disclosure; Fig 12; 62pp; English.

The present sequence is given in a specification relating to a method for
enhancing the biological activity of a vascular endothelial growth factor
(VEGF) originally having a cysteine residue at a position 116 of the 121
amino acid native mature human VEGF. The method comprises eliminating the
cysteine residue to produce a VEGF variant. The variant is useful for
inducing angiogenesis or vascular remodelling, for prevention or repair
of injury to blood vessels, where injury is associated with haemolytic
uraemic syndrome (HUS) or microvascular angiopathy such as thrombotic
microangiopathy (TMA). The VEGF variant is also useful for treatment of
essential hypertension in a patient. The variant is useful for treating
coronary artery disease and/or peripheral arterial disease, to foster
myocardial blood vessel growth and to improve blood flow to the heart. It
is useful for the treatment and prevention of kidney diseases associated
with injury to, or atrophy of, the vasculature of the glomerulus and
interstitium and for the treatment and prevention of acute renal failure,
myocardial infarction, ischaemic bowel disease, transient ischaemic
attacks, stroke, hypoxia, hypercapnia, focal glomerulosclerosis,
amyloidosis, glomerulonephritis, diabetes, systemic lupus erythematosus
or chronic hypoxia/atrophy. It is also useful in the preservation or
enhancement of function of organ allografts and xenografts, and for
treating disorders related to abnormal transport of solutes across
endothelial cells such as meningitis, tumour, infections, disorders of
bone growth, acute respiratory distress syndrome, toxic alveolar injury,
pneumonia, cystic fibrosis, inflammatory bowel disease, infectious
diarrhoea or cardiac valve disease.

XX SQ Sequence 110 AA;
Query Match 80.0%; Score 88; DB 22; Length 110;
Best Local Similarity 80.0%; Pred. No. 1.4e-06;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Oy 1 HHEVVKFEDVLRSSCHPIE 20
||||| | : || |||||
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 15
AAB76304
ID AAB76304 standard; Protein; 110 AA.
XX AC AAB76304;
XX DT 12-AUG-2002 (first entry)
XX DE Human vascular endothelial growth factor 110.
XX KW Vascular endothelial growth factor; VEGF; hVEGF110; human;
KW hypertension; hypotensive; nephrotropic; cerebroprotective;
KW antibacterial; cytostatic; antialcoholic; virucide; vasotrophic;
KW antiarrhoeic; immunosuppressive; cardiant; antiinflammatory;
KW angiogenic factor.
XX OS Homo sapiens.
XX PN US6352975-B1.
XX PD 05-MAR-2002.
XX PF 09-SEP-1999; 99US-0392932.
XX PR 09-SEP-1998; 98US-099694P.
XX PR 26-MAR-1999; 99US-126406P.
XX PR 27-MAR-1999; 99US-126615P.
XX PA (SCIO-) SCIOS INC.
XX PI Schreiner GF, Johnson RJ;
XX DR WPI; 2002-412951/44.
XX PT New method, useful in treatment of salt-sensitive hypertension,
PT comprises administration of a vascular endothelial growth factor to a
PT patient -
XX PS Disclosure; Fig 11; 30pp; English.

The present sequence is the protein sequence of human vascular
endothelial growth factor 110 (hVEGF110). The present invention
concerns methods for the treatment of salt-sensitive hypertension
by administering a VEGF in an amount effective to reduce the blood
pressure of a salt-sensitive hypertension patient to a normal
range. The VEGF is preferably hVEGF121 (see ABB76299) or a VEGF
that has had its heparin-binding domain modified to render it
incapable of binding heparin, e.g. by amino acid alteration.
VEGF110 is not one of the preferred VEGF molecules. The method can
also be used to treat disorders relating to abnormal transport of
solutes across endothelial cells, including treatment or prevention
of kidney disease associated with impaired filtration or excretion
of solutes, central nervous system diseases associated with
alterations in cerebrospinal fluid synthesis, composition or
circulation including stroke, meningitis, tumour, infections, and
disorders of bone growth, hypoxia or hypercapnia or fibrosis
arising from accumulation of fluid secretions in lungs or
impediments to their removal, including acute respiratory distress
syndrome, toxic alveolar injury as occurs in smoke inhalation,
pneumonia including viral and bacterial infections, surgical
interventions, cystic fibrosis, and other inherited or acquired
disease of the lung associated with fluid accumulation in the
pulmonary air space, pulmonary endothelium injury, disordered
transport of fluid and solutes across the intestinal epithelium,
including inflammatory bowel disease, infections, diarrhoea,
ascites accumulation in the peritoneum as occurs in the failure of

CC heart, liver and kidney, preservation and enhancement of function
 CC of organ allografts, and cardiac valve disease.

XX
 SQ Sequence 110 AA;

Query Match 80.0%; Score 88; DB 23; Length 110;

Best Local Similarity 80.0%; Pred. No. 1:4e-06;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
 ||||||| ||:|||||
 Db 11 HHEVAFMDVYQSYCHPIE 30

Search completed: July 24, 2003, 14:45:44
 Job time : 68.7353 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:43:50 ; Search time 17.0588 Seconds
(without alignments)
49.606 Million cell updates/sec

Title: PEP2

Perfect score: 110

Sequence: 1 HHEVVKFEDVLRSSCHPIE 20

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 328717 seqs, 42310858 residues

Total number of hits satisfying chosen parameters: 328717

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database :

Issued_Patents_AA:*

1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep.*

2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep.*

3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep.*

4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep.*

5: /cgn2_6/ptodata/1/iaa/PCRUS_COMB.pep.*

6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	88	80.0	37	6 5240848-10	Patent No. 5240848
2	88	80.0	109	3 US-08-691-794-3	Sequence 3, Appl
3	88	80.0	110	4 US-09-392-932-11	Sequence 11, Appl
4	88	80.0	110	4 US-09-574-708A-11	Sequence 11, Appl
5	88	80.0	110	4 US-09-822-270-17	Sequence 17, Appl
6	88	80.0	121	6 5194596-19	Patent No. 5194596
7	88	80.0	121	6 5219739-20	Patent No. 5219739
8	88	80.0	137	4 US-09-037-983C-17	Sequence 17, Appl
9	88	80.0	138	4 US-09-037-983C-16	Sequence 16, Appl
10	88	80.0	141	4 US-09-519-476-2	Sequence 2, Appl
11	88	80.0	145	3 US-08-784-551C-2	Sequence 2, Appl
12	88	80.0	145	4 US-09-392-932-2	Sequence 2, Appl
13	88	80.0	145	4 US-09-574-708A-4	Sequence 4, Appl
14	88	80.0	145	4 US-09-037-983C-2	Sequence 2, Appl
15	88	80.0	147	3 US-08-807-992B-1	Sequence 1, Appl
16	88	80.0	147	4 US-09-392-932-1	Sequence 1, Appl
17	88	80.0	147	4 US-08-706-054A-4	Sequence 4, Appl
18	88	80.0	147	4 US-09-574-708A-2	Sequence 2, Appl
19	88	80.0	147	4 US-09-431-888-3	Sequence 3, Appl
20	88	80.0	147	4 US-09-313-299-4	Sequence 4, Appl
21	88	80.0	164	4 US-09-244-583-24	Sequence 24, Appl
22	88	80.0	165	4 US-08-882-816-3	Sequence 3, Appl
23	88	80.0	165	4 US-08-802-052B-3	Sequence 3, Appl
24	88	80.0	165	6 5194596-18	Patent No. 5194596
25	88	80.0	165	6 5219739-19	Patent No. 5219739
26	88	80.0	188	4 US-09-244-583-28	Sequence 28, Appl
27	88	80.0	191	3 US-08-567-200A-2	Sequence 2, Appl

28 88 80.0 191 3 US-08-807-992B-2 Sequence 2, Appl
29 88 80.0 191 3 US-08-691-794-2 Sequence 2, Appl
30 88 80.0 191 3 US-08-795-430-56 Sequence 56, Appl
31 88 80.0 191 4 US-09-392-932-3 Sequence 3, Appl
32 88 80.0 191 4 US-09-355-700-56 Sequence 56, Appl
33 88 80.0 191 4 US-08-882-816-2 Sequence 2, Appl
34 88 80.0 191 4 US-09-574-708A-6 Sequence 6, Appl
35 88 80.0 191 4 US-08-802-052B-2 Sequence 2, Appl
36 88 80.0 191 4 US-09-431-888-4 Sequence 4, Appl
37 88 80.0 191 6 5332671-4 Patent No. 5332671
38 88 80.0 208 4 US-09-244-583-26 Sequence 26, Appl
39 88 80.0 213 4 US-09-574-708A-8 Sequence 8, Appl
40 88 80.0 214 6 5240848-11 Patent No. 5240848
41 88 80.0 215 3 US-08-807-992B-3 Sequence 3, Appl
42 88 80.0 215 3 US-08-586-039B-49 Sequence 49, Appl
43 88 80.0 215 4 US-09-699-769-49 Sequence 49, Appl
44 88 80.0 215 6 5219739-22 Patent No. 5219739
45 88 80.0 215 6 5240848-7 Patent No. 5240848

ALIGNMENTS

RESULT 1
5240848-10
; Patent No. 5240848
; APPLICANT: KECK, PAMELA J.; CONNOLLY, DANIEL T.; FEDER, JOSEPH
; TITLE OF INVENTION: DNA SEQUENCES ENCODING HUMAN VASCULAR
; PERMEABILITY FACTOR HAVING 189 AMINO ACIDS
; NUMBER OF SEQUENCES: 11
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/337,037
; FILING DATE: 10-JUL-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 274,061
; FILING DATE: 21-NOV-1988
; SEQ ID NO:10:
; LENGTH: 37
5240848-10

Query Match 80.0%; Score 88; DB 6; Length 37;
Best Local Similarity 80.0%; Pred. No. 1.5e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1: HHEVVKFEDVLRSSCHPIE 20
||||||| : |||||
Db 11 HHEVVKFEDVLRSSCHPIE 30

RESULT 2
US-08-691-794-3
; Sequence 3, Application US/08691794
; Patent No. 6057428
; GENERAL INFORMATION:
; APPLICANT: Keyt, Bruce A.
; APPLICANT: Nguyen, Francis H.
; APPLICANT: Ferrara, Napoleone
; APPLICANT: Cunningham, Brian C.
; APPLICANT: Wells, James A.
; APPLICANT: Li, Bing
; TITLE OF INVENTION: Variants of Vascular Endothelial Cell
; TITLE OF INVENTION: Growth Factor, Their Uses, and Processes for their
; TITLE OF INVENTION: Production
; NUMBER OF SEQUENCES: 45
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Flehr, Hobbach, Test, Albritton & Herbert
; STREET: Four Embarcadero Center, Suite 3400
; CITY: San Francisco
; STATE: California
; COUNTRY: United States
; ZIP: 94111-4187
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/691,794
FILING DATE: 02-AUG-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/002,827
FILING DATE: 25-AUG-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/567,200
FILING DATE: 05-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Greger, Walter H.
REGISTRATION NUMBER: 24,190
REFERENCE/DOCKET NUMBER: A-63758/WHD
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 781-1989
TELEFAX: (415) 398-3249
TELEX: 910 277299
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 109 amino acids
TYPE: amino acid
STRANDEDNESS: unknown
TOPOLOGY: unknown
MOLECULE TYPE: protein
US-08-691-794-3

Query Match 80.0%; Score 88; DB 3; Length 109;
Best Local Similarity 80.0%; Pred. No. 4.8e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 3
US-09-392-932-11
Sequence 11, Application US/09392932
Patent No. 6352975
GENERAL INFORMATION:
APPLICANT: Schreiner, George F.
APPLICANT: Johnson, Richard J.
TITLE OF INVENTION: METHODS OF TREATING HYPERTENSION AND
TITLE OF INVENTION: COMPOSITIONS FOR USE THEREIN
FILE REFERENCE: SCIOS.002A
CURRENT APPLICATION NUMBER: US/09/392,932
CURRENT FILING DATE: 1999-09-09
EARLIER APPLICATION NUMBER: 60/099,694
EARLIER FILING DATE: 1998-09-09
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 11
LENGTH: 110
TYPE: PRT
ORGANISM: Homo Sapiens
US-09-392-932-11

Query Match 80.0%; Score 88; DB 4; Length 110;
Best Local Similarity 80.0%; Pred. No. 4.8e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 4
US-09-574-708A-11
Sequence 11, Application US/09574708A

Patent No. 6475796
GENERAL INFORMATION:
APPLICANT: N. Stephen Pollitt
APPLICANT: Judith A. Abraham
TITLE OF INVENTION: Vascular endothelial growth factor
TITLE OF INVENTION: variants
FILE REFERENCE: SCIOS004A
CURRENT APPLICATION NUMBER: US/09/574,708A
CURRENT FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/135,312
PRIOR FILING DATE: 1999-05-20
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 11
LENGTH: 110
TYPE: PRT
ORGANISM: Homo sapiens
US-09-574-708A-11

Query Match 80.0%; Score 88; DB 4; Length 110;
Best Local Similarity 80.0%; Pred. No. 4.8e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 5
US-09-822-270-17
Sequence 17, Application US/09822270
Patent No. 6559126
GENERAL INFORMATION:
APPLICANT: TOURNARE, ROSELYNE
APPLICANT: DEMANGEL, CAROLINE
APPLICANT: DERBIN, CLAUDE
APPLICANT: PERRET, GERARD
APPLICANT: MAZIE, JEAN-CLAUDE
APPLICANT: PLOUET, JEAN
APPLICANT: VASSAY, ROGER
TITLE OF INVENTION: PEPTIDES BLOCKING VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF)-MI
TITLE OF INVENTION: ANGIOGENESIS, POLYNUCLEOTIDES ENCODING SAID PEPTIDES AND METI
FILE REFERENCE: 205060USO
CURRENT APPLICATION NUMBER: US/09/822,270
CURRENT FILING DATE: 2001-04-02
PRIOR APPLICATION NUMBER: US 60/193,396
PRIOR FILING DATE: 2000-03-31
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn version 3.1
SEQ ID NO 17
LENGTH: 110
TYPE: PRT
ORGANISM: ARTIFICIAL SEQUENCE
FEATURE:
OTHER INFORMATION: SYNTHETIC PEPTIDE
US-09-822-270-17

Query Match 80.0%; Score 88; DB 4; Length 110;
Best Local Similarity 80.0%; Pred. No. 4.8e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 6
5194596-19
Patent No. 5194596
APPLICANT: TISCHER, EDMUND G.; ABRAHAM, JUDITH A.; FIDDES, JOHN
C.; MITCHELL, RICHARD L.
TITLE OF INVENTION: PRODUCTION OF VASCULAR ENDOTHELIAL CELL
GROWTH FACTOR

US-09-037-983C-17

; Sequence 2, Application US/08784551C

Patent No. 6013780
GENERAL INFORMATION:
APPLICANT: Gera Neufeld
APPLICANT: Eli Keshet
APPLICANT: Israel Vlodavsky
APPLICANT: Zoya Poltorak
TITLE OF INVENTION: ANGIOGENIC FACTOR AND USE THEREOF
TITLE OF INVENTION: IN TREATING CARDIOVASCULAR DISEASE
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSER: Blank, Rome, Comisky & McCauley LLP
STREET: 900 17th Street, N.W.
STREET: Suite 1000
CITY: Washington, D.C.
STATE: N/A
COUNTRY: U.S.A.
ZIP: 20006
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
MEDIUM TYPE: Storage
COMPUTER: IBM Compatible
OPERATING SYSTEM: IBM P.C. DOS 5.0
SOFTWARE: FastSeq for Windows 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/784,551C
FILING DATE: January 21, 1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Cohen, Herbert
REGISTRATION NUMBER: 25,109
REFERENCE/DOCKET NUMBER: 0274.005/P003
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 463-7700
TELEFAX: (202) 463-6915
TELEX:
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 145 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
US-08-784-551C-2

Query Match 80.0%; Score 88; DB 3; Length 145;
Best Local Similarity 80.0%; Pred. No. 6.5e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 12
US-09-392-932-2
Sequence 2, Application US/09392932
Patent No. 6352975
GENERAL INFORMATION:
APPLICANT: Schreiner, George F.
APPLICANT: Johnson, Richard J.
TITLE OF INVENTION: METHODS OF TREATING HYPERTENSION AND
TITLE OF INVENTION: COMPOSITIONS FOR USE THEREIN
FILE REFERENCE: SCIOS.002A
CURRENT APPLICATION NUMBER: US/09/392,932
CURRENT FILING DATE: 1999-09-09
EARLIER APPLICATION NUMBER: 60/099,694
EARLIER FILING DATE: 1998-09-09
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSeq for Windows version 4.0
SEQ ID NO 2
LENGTH: 145

TYPE: PRT
ORGANISM: Homo Sapiens
US-09-392-932-2
Query Match 80.0%; Score 88; DB 4; Length 145;
Best Local Similarity 80.0%; Pred. No. 6.5e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 13
US-09-574-708A-4
Sequence 4, Application US/09574708A
Patent No. 6475796
GENERAL INFORMATION:
APPLICANT: N. Stephen Pollitt
APPLICANT: Judith A. Abraham
TITLE OF INVENTION: Vascular endothelial growth factor
FILE REFERENCE: SCIOS004A
CURRENT APPLICATION NUMBER: US/09/574,708A
CURRENT FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/135,312
PRIOR FILING DATE: 1999-05-20
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 4
LENGTH: 145
TYPE: PRT
ORGANISM: Homo sapiens
US-09-574-708A-4

Query Match 80.0%; Score 88; DB 4; Length 145;
Best Local Similarity 80.0%; Pred. No. 6.5e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 14
US-09-037-983C-2
Sequence 2, Application US/09037983C
Patent No. 6583276
GENERAL INFORMATION:
APPLICANT: Newfeld, Gera
APPLICANT: Keshet, Eli
APPLICANT: Vlodavsky, Israel
APPLICANT: Poltorak, Zoya
TITLE OF INVENTION: Angiogenic Factor and Use Thereof in Treating Cardiovascular I
FILE REFERENCE: 000274-00009
CURRENT APPLICATION NUMBER: US/09/037,983C
CURRENT FILING DATE: 1998-03-11
PRIOR APPLICATION NUMBER: 60/025,537
PRIOR FILING DATE: 1996-09-06
NUMBER OF SEQ ID NOS: 17
SOFTWARE: PatentIn version 3.1
SEQ ID NO 2
LENGTH: 145
TYPE: PRT
ORGANISM: Homo sapiens
US-09-037-983C-2

Query Match 80.0%; Score 88; DB 4; Length 145;
Best Local Similarity 80.0%; Pred. No. 6.5e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
Db 11 HHEVVKFMDVYQSYCHPIE 30

Db 11 HHEVVKFMDVYQSYCHPIE 30

RESULT 15

US-08-807-992B-1
 ; Sequence 1, Application US/08807992B
 ; Patent No. 6022541
 ; GENERAL INFORMATION:
 ; APPLICANT: Senger, Donald R.
 ; APPLICANT: Dvorak, Harold F.
 ; TITLE OF INVENTION: Immunological preparation for concurrent
 ; TITLE OF INVENTION: specific binding to spatially exposed regions of vascular
 ; TITLE OF INVENTION: permeability factor bound in-vivo to a tumor associated blood
 ; TITLE OF INVENTION: vessel
 ; NUMBER OF SEQUENCES: 31
 ; CORRESPONDENCE ADDRESS:
 ; ADDRESSEE: David Prashker, Esq.
 ; STREET: P.O. Box 5387
 ; CITY: Magnolia
 ; STATE: Massachusetts
 ; COUNTRY: USA
 ; ZIP: 01930
 ; COMPUTER READABLE FORM:
 ; MEDIUM TYPE: Diskette, 3.50 inch, 1.40 Mb storage
 ; COMPUTER: IBM PS/1
 ; OPERATING SYSTEM: MS DOS
 ; SOFTWARE: WordPerfect version 5.1
 ; CURRENT APPLICATION DATA: US/08/807,992B
 ; APPLICATION NUMBER: US/08/807,992B
 ; FILING DATE: March 3, 1997
 ; CLASSIFICATION: 424
 ; ATTORNEY/AGENT INFORMATION:
 ; NAME: David Prashker, Esq.
 ; REGISTRATION NUMBER: 29,693
 ; REFERENCE/DOCKET NUMBER: BIS-033
 ; TELECOMMUNICATION INFORMATION:
 ; TELEPHONE: (978) 525-3794
 ; INFORMATION FOR SEQ ID NO: 1:
 ; SEQUENCE CHARACTERISTICS:
 ; LENGTH: 147 amino acids
 ; TYPE: amino acid
 ; STRANDEDNESS: single
 ; TOPOLOGY: linear
 ; US-08-807-992B-1

Query Match 80.08; Score 88; DB 3; Length 147;
 Best Local Similarity 80.08; Pred. No. 6.6e-07;
 Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20

Db 37 HHEVVKFMDVYQSYCHPIE 56

Search completed: July 24, 2003, 14:51:31
 Job time : 19.0588 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:47:39 ; Search time 38.8235 Seconds
(without alignments)
61.179 Million cell updates/sec

Title: PEP2

Perfect score: 110

Sequence: 1 HHEVVKFEDVLRSSCHPIE 20

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 451899 seqs, 118759770 residues

Total number of hits satisfying chosen parameters: 451899

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database :

Published Applications AA:

- 1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep.*
- 2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep.*
- 3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep.*
- 4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep.*
- 5: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep.*
- 6: /cgn2_6/ptodata/2/pubpaa/PCFUS_PUBCOMB.pep.*
- 7: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep.*
- 8: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep.*
- 9: /cgn2_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep.*
- 10: /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep.*
- 11: /cgn2_6/ptodata/2/pubpaa/US09C_PUBCOMB.pep.*
- 12: /cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep.*
- 13: /cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep.*
- 14: /cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep.*
- 15: /cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep.*
- 16: /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep.*
- 17: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep.*
- 18: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	88	80.0	54	10	US-09-795-006A-81
2	88	80.0	101	11	US-09-832-355A-2
3	88	80.0	105	10	US-09-795-006A-51
4	88	80.0	105	10	US-09-795-006A-59
5	88	80.0	105	10	US-09-795-006A-77
6	88	80.0	105	10	US-09-795-006A-153
7	88	80.0	110	9	US-09-822-270-17
8	88	80.0	110	14	US-10-083-817-11
9	88	80.0	110	15	US-10-268-447-11
10	88	80.0	121	11	US-09-832-355A-1
11	88	80.0	126	10	US-09-795-006A-43
12	88	80.0	126	10	US-09-795-006A-53
13	88	80.0	126	10	US-09-795-006A-55
14	88	80.0	126	10	US-09-795-006A-57
15	88	80.0	126	10	US-09-795-006A-61

16	88	80.0	126	10	US-09-795-006A-63
17	88	80.0	126	10	US-09-795-006A-65
18	88	80.0	128	10	US-09-795-006A-45
19	88	80.0	128	10	US-09-795-006A-67
20	88	80.0	128	10	US-09-795-006A-69
21	88	80.0	128	10	US-09-795-006A-71
22	88	80.0	128	10	US-09-795-006A-73
23	88	80.0	128	10	US-09-795-006A-75
24	88	80.0	128	10	US-09-795-006A-79
25	88	80.0	141	15	US-10-298-794-2
26	88	80.0	145	14	US-10-083-817-2
27	88	80.0	145	15	US-10-268-447-4
28	88	80.0	147	14	US-10-083-817-1
29	88	80.0	147	15	US-10-268-447-2
30	88	80.0	150	11	US-09-832-355A-61
31	88	80.0	154	11	US-09-832-355A-59
32	88	80.0	154	11	US-09-832-355A-62
33	88	80.0	162	11	US-09-832-355A-60
34	88	80.0	165	15	US-10-200-050-3
35	88	80.0	171	9	US-09-812-133-2
36	88	80.0	190	10	US-09-813-398-8
37	88	80.0	191	9	US-09-349-954A-2
38	88	80.0	191	10	US-09-932-451A-2
39	88	80.0	191	10	US-09-907-007-2
40	88	80.0	191	10	US-09-795-006A-2
41	88	80.0	191	10	US-09-870-759-122
42	88	80.0	191	14	US-10-083-817-3
43	88	80.0	191	15	US-10-200-050-2
44	88	80.0	191	15	US-10-201-386-56
45	88	80.0	191	15	US-10-268-447-6

ALIGNMENTS

RESULT 1

US-09-795-006A-81
; Sequence 81, Application US/09795006A
; Patent No. US20020151680A1
; GENERAL INFORMATION:
; APPLICANT: Alitalo et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795,006A
; PRIOR FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 81
; LENGTH: 54
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of t
US-09-795-006A-81

Query Match 80.0% ; Score 88; DB 10; Length 54;
Best Local Similarity 80.0% ; Pred. No. 8.3e-07;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20
||||||| : : : : :
Db 4 HHEVVKFMDVYQSYRCHPIE 23

RESULT 2

US-09-832-355A-2
; Sequence 2, Application US/09832355A
; Publication No. US20030027751A1

GENERAL INFORMATION:
APPLICANT: Allitalo et al
TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
TITLE OF INVENTION: ENDOTHELIAL GROWTH FACTOR DNAs AND PROTEINS
FILE REFERENCE: 28967/35577B
CURRENT APPLICATION NUMBER: US/09/795, 006A
CURRENT FILING DATE: 2001-02-26
PRIOR APPLICATION NUMBER: US 60/205, 331
PRIOR FILING DATE: 2000-05-18
PRIOR APPLICATION NUMBER: US 60/185, 205
PRIOR FILING DATE: 2000-02-25

1 GENERAL INFORMATION:
 2 APPLICANT: Allitalo et al
 3 TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
 4 TITLE OF INVENTION: ENDOTHELIAL GROWTH FACTOR DNAs AND PROTEINS
 5 FILE REFERENCE: 28967/35977B
 6 CURRENT APPLICATION NUMBER: US/09/7795,006A
 7 CURRENT FILING DATE: 2001-02-26
 8 PRIOR APPLICATION NUMBER: US 60/205,331
 9 PRIOR FILING DATE: 2000-05-18
 10 PRIOR APPLICATION NUMBER: US 60/185,205
 11 PRIOR FILING DATE: 2000-02-25
 12 NUMBER OF SEQ ID NOS: 175
 13 SOFTWARE: PatentIn Ver. 2.0
 14 SEQ ID NO 153
 15 LENGTH: 105

```
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-153

Query Match      80.0%; Score 88; DB 10; Length 105;
Best Local Similarity 80.0%; Pred. No. 1.7e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
   ||||| || :|| |||||
Db 4 HHEVVKFMDVYQRSYCHPIE 23

RESULT 7
US-09-822-270-17
; Sequence 17, Application US/09822270
; Patent No. US20020068697A1
; GENERAL INFORMATION:
; APPLICANT: TOURNARE, ROSELYNE
; APPLICANT: DEMANGEL, CAROLINE
; APPLICANT: DERBIN, CLAUDE
; APPLICANT: PERRET, GERARD
; APPLICANT: MAZIE, JEAN-CLAUDE
; APPLICANT: PLOUET, JEAN
; APPLICANT: VASSAY, ROGER
; TITLE OF INVENTION: PEPTIDES BLOCKING VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF)-MEDIA
; FILE REFERENCE: ANGIOGENESIS, POLYNUCLEOTIDES ENCODING SAID PEPTIDES AND METHODS
; CURRENT FILING DATE: 2001-04-02
; PRIOR FILING DATE: 2001-04-02
; PRIOR APPLICATION NUMBER: US 60/193,396
; PRIOR FILING DATE: 2000-03-31
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: Patentin version 3.1
; SEQ ID NO 17
; LENGTH: 110
; TYPE: PRT
; ORGANISM: ARTIFICIAL SEQUENCE
; FEATURE:
; OTHER INFORMATION: SYNTHETIC PEPTIDE
US-09-822-270-17

Query Match      80.0%; Score 88; DB 9; Length 110;
Best Local Similarity 80.0%; Pred. No. 1.8e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
   ||||| || :|| |||||
Db 11 HHEVVKFMDVYQRSYCHPIE 30

RESULT 8
US-10-083-817-11
; Sequence 11, Application US/10083817
; Publication No. US20020193288A1
; GENERAL INFORMATION:
; APPLICANT: Schreiner, George F.
; APPLICANT: Johnson, Richard J.
; TITLE OF INVENTION: METHODS OF TREATING HYPERTENSION AND
; FILE REFERENCE: COMPOSITIONS FOR USE THEREIN
; CURRENT APPLICATION NUMBER: US/10/083,817
; CURRENT FILING DATE: 2002-02-26
; PRIOR APPLICATION NUMBER: 60/099,694
; PRIOR FILING DATE: 1998-09-09
; PRIOR APPLICATION NUMBER: 09/392,932
; PRIOR FILING DATE: 1999-09-09
; NUMBER OF SEQ ID NOS: 11
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 11
; LENGTH: 110
```

```
; TYPE: PRT
; ORGANISM: Homo Sapien
US-10-083-817-11

Query Match      80.0%; Score 88; DB 14; Length 110;
Best Local Similarity 80.0%; Pred. No. 1.8e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
   ||||| || :|| |||||
Db 11 HHEVVKFMDVYQRSYCHPIE 30

RESULT 9
US-10-268-447-11
; Sequence 11, Application US/10268447
; Publication No. US20030096754A1
; GENERAL INFORMATION:
; APPLICANT: N. Stephen Pollitt
; APPLICANT: Judith A. Abraham
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL GROWTH FACTOR
; FILE REFERENCE: SCIOS.004DVI
; CURRENT APPLICATION NUMBER: US/10/268,447
; CURRENT FILING DATE: 2002-10-10
; PRIOR APPLICATION NUMBER: 60/135,312
; PRIOR FILING DATE: 1999-05-20
; PRIOR APPLICATION NUMBER: 09/574,708
; PRIOR FILING DATE: 2000-05-18
; NUMBER OF SEQ ID NOS: 11
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 11
; LENGTH: 110
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-268-447-11

Query Match      80.0%; Score 88; DB 15; Length 110;
Best Local Similarity 80.0%; Pred. No. 1.8e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
   ||||| || :|| |||||
Db 11 HHEVVKFMDVYQRSYCHPIE 30

RESULT 10
US-09-832-355A-1
; Sequence 1, Application US/09832355A
; Publication No. US20030027751A1
; GENERAL INFORMATION:
; APPLICANT: Kovesdi, Imre
; APPLICANT: Kessler, Paul
; TITLE OF INVENTION: VEGF FUSION PROTEINS
; FILE REFERENCE: 205654
; CURRENT APPLICATION NUMBER: US/09/832,355A
; CURRENT FILING DATE: 2001-04-10
; NUMBER OF SEQ ID NOS: 126
; SOFTWARE: Patentin version 3.0
; SEQ ID NO 1
; LENGTH: 121
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-832-355A-1

Query Match      80.0%; Score 88; DB 11; Length 121;
Best Local Similarity 80.0%; Pred. No. 2e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
   ||||| || :|| |||||
Db 11 HHEVVKFMDVYQRSYCHPIE 30
```


RESULT 11

US-09-795-006A-43

; Sequence 43, Application US/09795006A

; Patent No. US20020151680A1

; GENERAL INFORMATION:

; APPLICANT: Alitalo et al

; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR

; FILE REFERENCE: 28967/35977B

; CURRENT APPLICATION NUMBER: US/09/795-006A

; CURRENT FILING DATE: 2001-02-26

; PRIOR APPLICATION NUMBER: US 60/205,331

; PRIOR FILING DATE: 2000-05-18

; PRIOR APPLICATION NUMBER: US 60/185,205

; PRIOR FILING DATE: 2000-02-25

; NUMBER OF SEQ ID NOS: 175

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 43

; LENGTH: 126

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid

; OTHER INFORMATION: DNA

US-09-795-006A-43

Query Match

Best Local Similarity 80.0%; Score 88; DB 10; Length 126;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20

||||||| || :|| |||||

Db 4 HHEVVKFMDVYQRSYCHPIE 23

RESULT 12

US-09-795-006A-53

; Sequence 53, Application US/09795006A

; Patent No. US20020151680A1

; GENERAL INFORMATION:

; APPLICANT: Alitalo et al

; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR

; FILE REFERENCE: 28967/35977B

; CURRENT APPLICATION NUMBER: US/09/795-006A

; CURRENT FILING DATE: 2001-02-26

; PRIOR APPLICATION NUMBER: US 60/205,331

; PRIOR FILING DATE: 2000-05-18

; PRIOR APPLICATION NUMBER: US 60/185,205

; PRIOR FILING DATE: 2000-02-25

; NUMBER OF SEQ ID NOS: 175

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 53

; LENGTH: 126

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid

; OTHER INFORMATION: DNA

US-09-795-006A-53

Query Match

Best Local Similarity 80.0%; Score 88; DB 10; Length 126;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20

||||||| || :|| |||||

Db 4 HHEVVKFMDVYQRSYCHPIE 23

RESULT 13

US-09-795-006A-55

; Sequence 61, Application US/09795006A

; Patent No. US20020151680A1

; GENERAL INFORMATION:

; Sequence 55, Application US/09795006A

; Patent No. US20020151680A1

; GENERAL INFORMATION:

; APPLICANT: Alitalo et al

; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR

; FILE REFERENCE: 28967/35977B

; CURRENT APPLICATION NUMBER: US/09/795-006A

; CURRENT FILING DATE: 2001-02-26

; PRIOR APPLICATION NUMBER: US 60/205,331

; PRIOR FILING DATE: 2000-05-18

; PRIOR APPLICATION NUMBER: US 60/185,205

; PRIOR FILING DATE: 2000-02-25

; NUMBER OF SEQ ID NOS: 175

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 55

; LENGTH: 126

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid

US-09-795-006A-55

Query Match

Best Local Similarity 80.0%; Score 88; DB 10; Length 126;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20

||||||| || :|| |||||

Db 4 HHEVVKFMDVYQRSYCHPIE 23

RESULT 14

US-09-795-006A-57

; Sequence 57, Application US/09795006A

; Patent No. US20020151680A1

; GENERAL INFORMATION:

; APPLICANT: Alitalo et al

; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR

; FILE REFERENCE: 28967/35977B

; CURRENT APPLICATION NUMBER: US/09/795-006A

; CURRENT FILING DATE: 2001-02-26

; PRIOR APPLICATION NUMBER: US 60/205,331

; PRIOR FILING DATE: 2000-05-18

; PRIOR APPLICATION NUMBER: US 60/185,205

; PRIOR FILING DATE: 2000-02-25

; NUMBER OF SEQ ID NOS: 175

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 57

; LENGTH: 126

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: Description of Artificial Sequence: Artificial chimeric amin

; OTHER INFORMATION: sequence derived from multiple vertebrate vascular endothelial

US-09-795-006A-57

Query Match

Best Local Similarity 80.0%; Score 88; DB 10; Length 126;

Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20

||||||| || :|| |||||

Db 4 HHEVVKFMDVYQRSYCHPIE 23

RESULT 15

US-09-795-006A-61

; Sequence 61, Application US/09795006A

; Patent No. US20020151680A1

; GENERAL INFORMATION:

```

; APPLICANT: Alitalo et al
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR
; FILE REFERENCE: 28967/35977B
; CURRENT APPLICATION NUMBER: US/09/795,006A
; CURRENT FILING DATE: 2001-02-26
; PRIOR APPLICATION NUMBER: US 60/205,331
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/185,205
; PRIOR FILING DATE: 2000-02-25
; NUMBER OF SEQ ID NOS: 175
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 61
; LENGTH: 126
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: amino acid sequence of hybrid
US-09-795-006A-61

Query Match      80.0%; Score 88; DB 10; Length 126;
Best Local Similarity 80.0%; Pred.No. 2.le-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY      1 HHEVVKFEDVLRSSCHPIE 20
         |||||  ||  ||  |||||
Db       4 HHEVVKFNDVYQSYCHPIE 23

Search completed: July 24, 2003, 15:02:51
Job time : 39.8235 secs
```

GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:42:56 ; Search time 15.2941 Seconds
(without alignments)
125.759 Million cell updates/sec

Title: PEP2
Perfect score: 110
Sequence: 1 HHEVWFEDVLRSSCHPIE 20
Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283308 seqs, 96168682 residues

Total number of hits satisfying chosen parameters: 283308

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_76.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	88	80.0	232	2 A41551	vascular endotheli
2	72	65.5	120	2 A33787	vascular endotheli
3	72	65.5	190	2 S52130	vascular endotheli
4	72	65.5	190	2 B40080	vascular endotheli
5	72	65.5	190	2 A35987	glioma-derived vas
6	71	64.5	190	2 B44881	vascular endotheli
7	71	64.5	214	2 A44881	vascular endotheli
8	69	62.7	146	2 S57956	ovine vascular end
9	65	59.1	36	2 A60706	vascular endotheli
10	49	44.5	158	2 A56125	placental growth f
11	49	44.5	557	2 A70480	carbamoyl-phosphat
12	48	43.6	1140	2 T41457	dna repair protein
13	47	42.7	651	2 A26581	beta-glucuronidase
14	46	41.8	202	2 F69012	conserved hypothet
15	45	40.9	450	2 T02368	hypothetical prote
16	45	40.9	1075	1 OYRTHX	heat-stable entero
17	44	40.0	149	2 A41236	placental growth f
18	44	40.0	174	2 S58492	auxin-induced prot
19	44	40.0	174	2 S12244	auxin-induced prot
20	44	40.0	174	2 G86289	auxin-induced prot
21	44	40.0	563	2 S77533	DNA mismatch repai
22	44	40.0	760	2 S64023	ALK1 protein - yea
23	43.5	39.5	445	2 T47813	hypothetical prote
24	43.5	39.5	481	2 E90203	prolyl-LRNa synth
25	43.5	39.5	555	2 J01526	interleukin-1 rece
26	43	39.1	269	2 H85408	GATA transcription
27	43	39.1	269	2 T05288	GATA-binding trans
28	43	39.1	890	2 G64740	[protein-PII] urid
29	43	39.1	890	2 A90650	protein PII-uridyl

30	43	39.1	890	2 A85501	protein PII-uridyl
31	42.5	38.6	229	2 S46696	hypothetical prote
32	42	38.2	21	2 A56901	nerve growth facto
33	42	38.2	152	2 T43088	traj protein homol
34	42	38.2	387	2 T28402	ORF MSV241 leucine
35	42	38.2	412	2 C96789	protein T23E18.6 [
36	42	38.2	456	2 E70829	probable membrane
37	42	38.2	512	2 AD1694	2-isopropylmalate
38	42	38.2	528	2 S14944	regulatory protein
39	42	38.2	540	2 T49184	hypothetical prote
40	42	38.2	545	2 B69209	conserved hypothet
41	42	38.2	605	2 T43974	hypothetical prote
42	42	38.2	610	2 T44161	hypothetical prote
43	42	38.2	623	2 T09306	EFRR2 protein - hu
44	41.5	37.7	527	2 T21830	hypothetical prote
45	41	37.3	63	2 A58511	bromocontryphan pr

ALIGNMENTS

RESULT 1

A41551
vascular endothelial growth factor 206 precursor - human
N:Alternate names: vascular permeability factor
N:Contains: vascular endothelial growth factor 121 (VEGF 121); VEGF 165; VEGF 189;
C:Species: Homo sapiens (man)
C>Date: 28-Aug-1992 #sequence-revision 28-Aug-1992 #text-change 05-Nov-1999
C:Accession: A41551; C41551; B41551; A40454; B40454; C40454; A40079; A40080; J01465;
R:Houck, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.
Mol. Endocrinol. 5, 1806-1814, 1991
A:Title: The vascular endothelial growth factor family: identification of a fourth
A:Reference number: A41551; MUID:92168017; PMID:1791831
A:Accession: A41551
A:Molecule type: mRNA
A:Residues: 1-232 <H0U1>
A:Cross-references: GB:S85192; NID:g246155; PID:g246156
A:Accession: C41551
A>Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-140, 'N', 183-232 <H0U2>
A:Accession: B41551
A>Status: nucleic acid sequence not shown; not compared with conceptual translator
A:Molecule type: mRNA
A:Residues: 1-141, 227-232 <H0U>
R:Tischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Gospodarowicz, D.; Fiddes, J.C.
J. Biol. Chem. 265, 11947-11954, 1991
A:Title: The human gene for vascular endothelial growth factor. Multiple protein fa
A:Reference number: A40454; MUID:91268072; PMID:1711045
A:Accession: A40454
A:Molecule type: DNA
A:Residues: 1-165, 183-232 <T11>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M6397;
A:Accession: B40454
A:Molecule type: DNA
A:Residues: 1-140, 'N', 183-232 <T12>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M6397;
A:Accession: C40454
A:Molecule type: DNA
A:Residues: 1-141, 227-232 <T13>
A:Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M6397;
R:Keck, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly,
Science 246, 1309-1312, 1989
A:Title: Vascular permeability factor, an endothelial cell mitogen related to PDGF.
A:Reference number: A40079; MUID:90069609; PMID:2479987
A:Accession: A40079
A>Status: not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-165, 183-232 <VEC>
A:Cross-references: GB:M27281; NID:g340300; PIDN:AAA36807.1; PID:g340301
R:Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A:Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.

A:Reference number: A40080; MUID:90069608; PMID:2479986
 A:Accession: A40080
 A:Status: not compared with conceptual translation
 A:Molecule type: mRNA
 A:Residues: 1-140, 'N', 183-232 <LEU>
 A:Cross-references: GB:M32977; NID:g181970; PIDN:AAA35789.1; PID:g181971
 R:Weindel, K.; Marne, D.; Welch, H.A.
 Biochem. Biophys. Res. Commun. 183, 1167-1174, 1992
 A:Title: AIDS-associated Kaposi's sarcoma cells in culture express vascular endothelial
 A:Reference number: JQ1463; MUID:92231879; PMID:1567395
 A:Accession: JQ1463
 A:Molecule type: mRNA
 A:Residues: 1-140, 'N', 183-232 <WE2>
 A:Cross-references: EMBL:X62568; NID:g37658; PIDN:CAA44447.1; PID:g37659
 A:Experimental source: AIDS-Kaposi's sarcoma cell
 A:Accession: JQ1464
 A:Molecule type: mRNA
 A:Residues: 1-140, 'N', 227-232 <WE2>
 A:Experimental source: AIDS-Kaposi's sarcoma cell
 R:Connolly, D.R.; Olander, J.V.; Heuvelman, D.; Nelson, R.; Monsell, R.; Siegel, N.; Hay
 J. Biol. Chem. 264, 20017-20024, 1989
 A:Title: Human vascular permeability factor. Isolation from U937 cells.
 A:Reference number: A34492; MUID:90062112; PMID:2584205
 A:Accession: A34492
 A:Molecule type: protein
 A:Residues: 27-36; 43-49, 'R', 72-76, 'Q', 78-81; 59-71 <CON>
 C:Comment: The most common of several alternatively spliced forms is VEGF 165.
 C:Genetics:

A:Gene: GDB:VEGF
 A:Cross-references: GDB:132244; OMIM:192240
 A:Map position: 6p21-6p12
 C:Function:

A:Description: promotes fluid and protein leakage from blood vessels
 C:Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; extracellular p1d
 F:1-232/Product: vascular endothelial growth factor 206 precursor #status predicted <V20
 F:1-165, 183-232/Product: vascular endothelial growth factor 189 precursor #status predic
 F:1-141, 227-232/Product: vascular endothelial growth factor 121 precursor #status predic
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:101/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 80.0%; Score 88; DB 2; Length 232;
 Best Local Similarity 80.0%; Pred. No. 2.9e-06;
 Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

Qy 1 HHEVVKFEDVLRSSCHPIE 20
 ||||| || || |||||
 Db 37 HHEVVKFMDVYQSRCPRIE 56

RESULT 2
 A33787
 vascular endothelial growth factor (version 1) - bovine
 C:Species: Bos primigenius taurus (cattle)
 C:Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 05-Nov-1999
 C:Accession: A33787
 R:Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Crisf
 Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
 A:Title: Vascular endothelial growth factor: a new member of the platelet-derived growth
 A:Reference number: A33787; MUID:90121225; PMID:2610687
 A:Accession: A33787
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-120 <TIS>
 A:Cross-references: GB:M33750; NID:g163810; PIDN:AAA30805.1; PID:g163811
 C:Keywords: alternative splicing

Query Match 65.5%; Score 72; DB 2; Length 120;
 Best Local Similarity 73.7%; Pred. No. 0.0005;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

Qy 2 HHEVVKFEDVLRSSCHPIE 20
 ||||| || || |||||
 Db 11 HHEVVKFMDVYQSRCPRIE 29

RESULT 3
 S52130
 vascular endothelial growth factor - pig
 C:Species: Sus scrofa domestica (domestic pig)
 C:Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 05-Nov-1999
 C:Accession: S52130
 R:Sharma, H.S.; Tang, Z.H.; Gho, B.C.G.; Verdouw, P.D.
 Biochim. Biophys. Acta 1260, 235-238, 1995
 A:Title: Nucleotide sequence and expression of the porcine vascular endothelial growth
 A:Reference number: S52130; MUID:95143284; PMID:7841203
 A:Accession: S52130
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-190 <SHA>
 A:Cross-references: GB:X81380; NID:g587559; PIDN:CAA57143.1; PID:g587560

Query Match 65.5%; Score 72; DB 2; Length 190;
 Best Local Similarity 73.7%; Pred. No. 0.00078;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

Qy 2 HHEVVKFEDVLRSSCHPIE 20
 ||||| || || |||||
 Db 37 HHEVVKFMDVYQSRCPRIE 55

RESULT 4
 B40080
 vascular endothelial growth factor precursor (version 2) - bovine
 C:Species: Bos primigenius taurus (cattle)
 C:Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 05-Nov-1999
 C:Accession: B40080; B33787; A33255
 R:Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
 Science 246, 1306-1309, 1989
 A:Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
 A:Reference number: A40080; MUID:90069608; PMID:2479986
 A:Accession: B40080
 A:Molecule type: mRNA
 A:Residues: 1-190 <LEU>
 A:Cross-references: GB:M32976; NID:g163006; PIDN:AAA30502.1; PID:g163007
 R:Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Cr
 Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
 A:Title: Vascular endothelial growth factor: a new member of the platelet-derived grc
 A:Reference number: A33787; MUID:90121225; PMID:2610687
 A:Accession: B33787
 A:Molecule type: mRNA
 A:Residues: 27-190 <TIS>
 A:Cross-references: GB:M31836; NID:g163808; PIDN:AAA30804.1; PID:g163809
 R:Ferrara, N.; Henzel, W.J.
 Biochem. Biophys. Res. Commun. 161, 851-858, 1989
 A:Title: Pituitary follicular cells secrete a novel heparin-binding growth factor spe
 A:Reference number: A33255; MUID:89286596; PMID:2735925
 A:Accession: A33255
 A:Molecule type: protein
 A:Residues: 27-31 <FER>
 C:Keywords: alternative splicing; glycoprotein
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-190/Product: vascular endothelial growth factor #status predicted <MAT>
 F:100/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 65.5%; Score 72; DB 2; Length 190;
 Best Local Similarity 73.7%; Pred. No. 0.00078;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

Qy 2 HHEVVKFEDVLRSSCHPIE 20
 ||||| || || |||||
 Db 37 HHEVVKFMDVYQSRCPRIE 55

RESULT 5
 A35987
 glioma-derived vascular endothelial cell growth factor - rat

C;Species: Rattus norvegicus (Norway rat)
 C;Date: 16-Nov-1990 #sequence_revision 16-Nov-1990 #text_change 05-Nov-1999
 C;Accession: A35987
 R;Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Hope,
 Proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990
 A;Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is ho
 A;Reference number: A35987; MUID:90207249; PMID:2320579
 A;Accession: A35987
 A;Status: preliminary
 A;Molecule type: mRNA
 A;Residues: 1-190 <CON>
 A;Cross-references: GB:M32167; NID:g204287; PIDN:AAA41211.1; PID:g204288

Query Match 65.5%; Score 72; DB 2; Length 190;
 Best Local Similarity 73.7%; Pred. No. 0.00078;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
 ||||| || ||| |||
 DB 37 HEVVKFMDVYQSYCRPIE 55

RESULT 6
 B44881
 vascular endothelial growth factor-1 precursor - mouse
 C;Species: Mus musculus (house mouse)
 C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 05-Nov-1999
 C;Accession: B44881; A43351; A61029
 R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
 Development 114, 521-532, 1992
 A;Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
 A;Reference number: A44881; MUID:92274860; PMID:1592003
 A;Accession: B44881
 A;Molecule type: mRNA
 A;Residues: 1-190 <BRE>
 A;Cross-references: GB:S38083; NID:g249858; PIDN:AAB22253.1; PID:g249859
 A;Experimental source: embryo
 A;Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBIP:107623)
 R;Claffey, K.P.; Wilkison, W.O.; Spiegelman, B.M.
 J. Biol. Chem. 267, 16317-16322, 1992
 A;Title: Vascular endothelial growth factor. Regulation by cell differentiation and acti
 A;Reference number: A43351; MUID:92355593; PMID:1644816
 A;Accession: A43351
 A;Molecule type: mRNA
 A;Residues: 1-116, 'ER', 119-190 <CLA>
 A;Cross-references: GB:M95200; NID:g202350; PIDN:AAA40547.1; PID:g202351
 A;Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBIP:110675)
 R;Rosenthal, R.A.; Megyesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.
 Growth Factors 4, 53-59, 1990
 A;Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelial g
 A;Reference number: A61029; MUID:91197543; PMID:2085441
 A;Accession: A61029
 A;Molecule type: protein
 A;Residues: 27-38 <ROS>
 A;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein; mit

Query Match 64.5%; Score 71; DB 2; Length 190;
 Best Local Similarity 68.4%; Pred. No. 0.0011;
 Matches 13; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
 ||||| || ||| |||
 DB 37 HEVVKFMDVYQSYCRPIE 55

RESULT 7
 A44881
 vascular endothelial growth factor-3 precursor - mouse
 N;Contains: vascular endothelial growth factor-2; vascular permeability factor
 C;Species: Mus musculus (house mouse)
 C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 08-Oct-1999
 C;Accession: A44881; A44881; A60932; S52136
 R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.

Development 114, 521-532, 1992
 A;Title: Expression of vascular endothelial growth factor during embryonic angiogen
 A;Reference number: A44881; MUID:92274860; PMID:1592003
 A;Accession: A44881
 A;Molecule type: mRNA
 A;Residues: 1-214 <BRE>
 A;Cross-references: GB:S37052; NID:g249856; PIDN:AAB22252.1; PID:g249857
 A;Experimental source: embryo
 A;Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIP:104678)
 A;Accession: C44881
 A;Molecule type: mRNA
 A;Residues: 1-140,209-214 <BR2>
 A;Cross-references: GB:S38100; NID:g249860; PIDN:AAB22254.1; PID:g249861
 A;Note: sequence extracted from NCBI backbone (NCBIN:107624, NCBIP:107625)
 R;Clauss, M.; Gerlach, M.; Gerlach, H.; Brett, J.; Wang, F.; Familletti, P.C.; Pan,
 J. Exp. Med. 172, 1535-1545, 1990
 A;Title: Vascular permeability factor: a tumor-derived polypeptide that induces enc
 A;Reference number: A60932; MUID:91079755; PMID:2258694
 A;Accession: A60932
 A;Molecule type: protein
 A;Residues: 27-33 <CLA>
 R;Sugihara, T.; Kaul, S.C.; Mitsui, Y.; Madhwa, R.
 Biochim. Biophys. Acta 1224, 365-370, 1994
 A;Title: Enhanced expression of multiple forms of VEGF is associated with spontanec
 A;Reference number: S52136; MUID:95101726; PMID:7803491
 A;Accession: S52136
 A;Status: preliminary
 A;Molecule type: protein
 A;Residues: 27-46 <SUG>
 C;Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.
 C;Keywords: alternative splicing; angiogenesis; disulfide bond; glycoprotein; homoc
 F;1-26/Domain: signal sequence #status predicted <SIG>
 F;27-214/Product: vascular endothelial growth factor-3 #status experimental <MAT>

Query Match 64.5%; Score 71; DB 2; Length 214;
 Best Local Similarity 68.4%; Pred. No. 0.0013;
 Matches 13; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
 ||||| || ||| |||
 DB 37 HEVVKFMDVYQSYCRPIE 55

RESULT 8
 S57956
 ovine vascular endothelial growth factor - sheep
 C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
 C;Date: 13-Jan-1996 #sequence_revision 01-Mar-1996 #text_change 05-Nov-1999
 C;Accession: S57956
 R;Redmer, D.A.; Dai, Y.; Li, J.; Jones, S.C.; Moor, R.M.
 submitted to the EMBL Data Library, July 1995
 A;Reference number: S57956
 A;Accession: S57956
 A;Status: preliminary
 A;Molecule type: mRNA
 A;Residues: 1-146 <RED>
 A;Cross-references: EMBL:X89506; NID:g899350; PIDN:CAA61677.1; PID:g899351

Query Match 62.7%; Score 69; DB 2; Length 146;
 Best Local Similarity 68.4%; Pred. No. 0.0018;
 Matches 13; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
 ||||| || ||| |||
 DB 37 HEVVKFMDVYQSYCRPIE 55

RESULT 9
 A60706
 vascular endothelial growth factor - guinea pig (fragment)
 N;Alternate names: vascular permeability factor
 C;Species: Cavia porcellus (guinea pig)
 C;Date: 14-May-1993 #sequence_revision 14-May-1993 #text_change 17-Mar-1999

```

F:9-468/Domain: biotin carboxylase homology <BCH>

Query Match      44.5%; Score 49; DB 2; Length 557;
Best Local Similarity 56.3%; pred. No. 8.8;
Matches 9; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

Qy 3 EVVKFEDVLRSSCHP 18
   |::|::|::|::|
Db 465 EIVKFEVLRKEELTP 480

RESULT 12
T41457
dna repair protein rad18 - fission yeast (Schizosaccharomyces pombe)
C:Species: Schizosaccharomyces pombe
C:Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 03-Dec-1999
C:Accession: T41457
R:Wood, V.; Rajandream, M.A.; Barrell, B.G.; Rieger, M.
submitted to the EMBL Data Library, November 1998
A:Reference number: Z21995
A:Accession: T41457
A:Status: preliminary; translated from GB/EMBL/DDBJ
A:Molecule type: DNA
A:Residues: 1-1140 <WOO>
A:Cross-references: EMBL:AL033406; PIDN:CAA21961.1; GSPDB:GN00068; SPDB:SPCC5E4.06
A:Experimental source: strain 972h-; cosmid c5E4
C:Genetics:
A:Gene: SPDB:SPCC5E4.06
A:Map position: 3
A:Introns: 37/3

```

R;Wood, V.; Rajandream, M.A.; Barréil, B.G.; Rieger, M.
submitted to the EMBL Data Library, November 1998
A:Reference number: Z21995
A:Accession: T41457
A:Status: preliminary; translated from GB/EMBL/DBDJ
A:Molecule type: DNA
A:Residues: 1-1140 <NO>
A:Cross-references: EMBL:AL033406; PIDN:CAA21961.1; GSPDB:GN000068; SPDB:SPCC5E4.06
A:Experimental source: strain 972h-; cosmid c5E4
C:Genetics:
A:Gene: SPDB:SPCC5E4.06
A:Map position: 3
A:Introns: 37/3

A: Status: preliminary; translated from GE/EMBL/DDBO
A: Molecule type: DNA
A: Molecule residues: 1-1140 <MO>
A: Residues: 1-1140 <MO>
A: Cross-references: EMBL:AL033406; PTDN:CAA21961.1; GSPDB:GN00068; SPDB:SPCC5E4.06
A: Experimental source: strain 972h-; cosmid c5E4
C: Genetics:
A: Gene: SPDB:SPCC5E4.06
A: Map position: 3
A: Introns: 37/3

C:Genetics:
A:Gene: SPDB:SPCC5E4.06
A:Map position: 3
A:Introns: 37/3

A;Map position: 3
A; Introns: 37/3

A:Reference number: A36538; MUID:91090114; PMID:1702266
 A:Accession: A36538
 A:Molecule type: mRNA
 A:Residues: 378-385,616-621,643-651 <TOM>
 C:Genetics:

A:Gene: GDB:GUSB
 A:Cross-references: GDB:120025; OMIM:253220
 A:Map position: 7q22-7q22
 C:Superfamily: beta-glucuronidase
 C:Keywords: glycoprotein; glycosidase; homotrimer; hydrolase; lysosome
 F1-22/Domain: signal sequence #status predicted <SIG>
 F23-651/Product: beta-glucuronidase, placental #status predicted <MAT>

Query Match 42.7%; Score 47; DB 2; Length 651;
 Best Local Similarity 44.4%; Pred. No. 21;
 Matches 8; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHP 18
 || : ||: || ||
 DB 424 HHMQVMEVRRDKNHP 441

RESULT 14
 F69012
 conserved hypothetical protein MTH1096 Methanobacterium thermoautotrophicum (strain De
 C:Species: Methanobacterium thermoautotrophicum
 C:Date: 05-Dec-1997 #sequence_revision 05-Dec-1997 #text_change 22-Oct-1999
 C:Accession: F69012
 R:Smith, D.R.; Doucette-Stamm, L.A.; Deloughery, C.; Lee, H.; Dubois, J.; Aldredge, T.;
 Qiu, D.; Spadafora, R.; Vicario, R.; Wang, Y.; Wierzbowski, J.; Gibson, R.; Jiwan, N.
 ki, S.; Church, G.M.; Daniels, C.J.; Mao, J.; Rice, P.; Noelling, J.; Reeve, J.N.
 J. Bacteriol. 179, 7135-7155, 1997
 A:Title: Complete genome sequence of Methanobacterium thermoautotrophicum Delta H: funct
 A:Reference number: A69000; MUID:98037514; PMID:9371463
 A:Accession: F69012
 A>Status: preliminary; nucleic acid sequence not shown; translation not shown
 A:Molecule type: DNA
 A:Residues: 1-202 <MTH>
 A:Cross-references: GB:AE000880; GB:AE000666; NID:92622192; PIDN:AAB85585.1; PID:g262219
 A:Experimental source: strain Delta H
 C:Genetics:
 A:Gene: MTH1096
 A:Start codon: TTG

Query Match 41.8%; Score 46; DB 2; Length 202;
 Best Local Similarity 66.7%; Pred. No. 9.8;
 Matches 8; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 6 KFEDVLRSSCH 17
 || ||: || ||
 DB 14 KFDLLREISCH 25

RESULT 15
 T02368
 hypothetical protein T8F5.23 - Arabidopsis thaliana
 C:Species: Arabidopsis thaliana (mouse-ear cross)
 C:Date: 05-Mar-1999 #sequence_revision 05-Mar-1999 #text_change 22-Oct-1999
 C:Accession: T02368
 R:Vysotskaia, V.S.; Schwartz, J.R.; Toriumi, M.; Yu, G.; Kwan, A.; Liu, S.; Li, J.; Arau
 Li, Y.; Palm, C.J.; Shinn, P.; Sun, H.; Davis, R.W.; Ecker, J.R.; Federspiel, N.A.; Theo
 submitted to the EMBL Data Library, July 1998
 A:Description: Arabidopsis thaliana chromosome 1 BAC T8F5 complete sequence.
 A:Reference number: 214666
 A:Accession: T02368
 A>Status: translated from GB/EMBL/DBJ
 A:Molecule type: DNA
 A:Residues: 1-450 <VYS>
 A:Cross-references: EMBL:AC004512; NID:933335331; PID:g33335350; GSPDB:GN00059; ATSP:T8F5.
 C:Genetics:
 A:Gene: ATSP:T8F5.23
 A:Map position: 1
 A:Introns: 154/3

Query Match 40.9%; Score 45; DB 2; Length 450;
 Best Local Similarity 77.8%; Pred. No. 30;
 Matches 7; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 HHEVVKFED 9
 ||: ||: ||: ||
 DB 218 HHLEVKFQD 226

Search completed: July 24, 2003, 14:50:50
 Job time : 17.2941 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2003 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: July 24, 2003, 14:08:59 ; Search time 15.2941 Seconds
(without alignments)
61.496 Million cell updates/sec

Title: PEP2

Perfect score: 110

Sequence: 1 HHEVRFEDVLRSSCHPIE 20

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 127863 seqs, 47026705 residues

Total number of hits satisfying chosen parameters: 127863

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_41.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	88	80.0	232	1 VEGA_HUMAN	P15692 homo sapien
2	73	66.4	190	1 VEGA_MESAU	Q99ps1 mesocricetu
3	72	65.5	190	1 VEGA_BOVIN	P15691 bos taurus
4	72	65.5	190	1 VEGA_HORSE	Q9gk0 equus caball
5	72	65.5	190	1 VEGA_PIG	P49151 sus scrofa
6	72	65.5	214	1 VEGA_CANFA	Q9myv3 canis famill
7	72	65.5	214	1 VEGA_RAT	P16612 rattus norv
8	71	64.5	214	1 VEGA_MOUSE	Q00731 mus musculus
9	69	62.7	146	1 VEGA_SHEEP	P50412 ovis aries
10	59	53.6	164	1 VEGA_CAVPO	P26617 cavia porce
11	52	47.3	149	1 PLGF_BOVIN	Q9x847 bos taurus
12	50	45.5	216	1 VEGA_CHICK	P52582 gallus gall
13	49	44.5	158	1 PLGF_MOUSE	P49764 mus musculus
14	49	44.5	158	1 PLGF_RAT	Q63434 rattus norv
15	49	44.5	557	1 CAB1_AQUAE	Q67869 aquifex aeo
16	48	43.6	160	1 N1FX_RHTSN	P55675 rhizobium s
17	48	43.6	1140	1 RA18_SCHPO	P53692 schizosacch
18	47.5	43.2	304	1 NAAL_METAC	Q8ts46 methanosarc
19	47	42.7	651	1 BGLR_HUMAN	P08236 homo sapien
20	45.5	41.4	304	1 NADA_METMA	Q8pv98 methanosarc
21	45	40.9	222	1 TRPE_XANCP	Q8pj26 xanthomonas
22	45	40.9	222	1 TRPE_XANCP	Q8pj26 xanthomonas
23	45	40.9	1072	1 HSER_RAT	P23897 rattus norv
24	44	40.0	174	1 AXIS_ARATH	P33078 arabidopsis
25	44	40.0	221	1 PLGF_HUMAN	P49763 homo sapien
26	44	40.0	556	1 MUTL_SYNY3	P73349 synechocyst
27	44	40.0	760	1 ALK1_YEAST	P43633 saccharomyc
28	43	39.1	890	1 GLND_ECO57	Q8x8y6 escherichia
29	43	39.1	890	1 GLND_ECOL6	Q8cy19 escherichia
30	43	39.1	890	1 GLND_ECOL1	P27249 escherichia
31	42.5	38.6	229	1 CG18_YEAST	P38794 saccharomyc
32	42.5	38.6	793	1 REGA_DICDI	Q23917 dictyosteli
33	42	38.2	512	1 LEUL_LISIN	Q92a28 listeria in

34	42	38.2	528	1	UGA3_YEAST	P26370 saccharomyc
35	42	38.2	541	1	CH60_ANAPH	Q34191 anaplasma p
36	41	37.3	63	1	COW1_CONPU	P58784 conus purpu
37	41	37.3	63	1	COW_CONPA	P58786 conus radia
38	41	37.3	139	1	DEF_THETN	Q8r9c0 thermoaer
39	41	37.3	292	1	CC22_ORYSA	P29619 oryza sativ
40	41	37.3	293	1	SPEE_YEAST	Q12074 saccharomyc
41	41	37.3	620	1	YM20_YEAST	Q03162 saccharomyc
42	41	37.3	725	1	SPEL_DIACA	Q96412 dianthus ca
43	41	37.3	1371	1	VCAP_HVSA	Q00959 herpesvirus
44	41	37.3	1427	1	SRB8_YEAST	P25648 saccharomyc
45	40.5	36.8	346	1	LLVC_BUCUE	Q9aq97 buchnera ap

ALIGNMENTS

RESULT 1
VEGA_HUMAN STANDARD; PRT; 232 AA.
AC P15692: 060720; 075875; Q16889; Q96NW5; Q9H1W9; Q9UH58;
AC Q9UL23; 1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 42, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
DE VEGF OR VEGFA.
GN Homo sapiens (Human).
OS Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORMS VEGF189 AND VEGF165).
RX MEDLINE=90069608; PubMed=2479986;
RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT "Vascular endothelial growth factor is a secreted angiogenic mitogen.";
RL Science 246:1306-1309(1989).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORM VEGF189), AND PARTIAL SEQUENCE.
RX MEDLINE=90069609; PubMed=2479987;
RA Keck P.J., Hauser S.D., Krivi G., Sanzo K., Warren T., Feder J., Connolly D.T.;
RT "Vascular permeability factor, an endothelial cell mitogen related to PDGF.";
RL Science 246:1309-1312(1989).
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM VEGF189).
RX MEDLINE=91268072; PubMed=1711045;
RA Tischer E., Mitchell R., Hartman T., Silva M., Gospodarowicz D., Fiddes J.C., Abraham J.A.;
RT "The human gene for vascular endothelial growth factor. Multiple protein forms are encoded through alternative exon splicing.";
RN J. Biol. Chem. 266:11947-11954(1991).
RN [4]
RP SEQUENCE FROM N.A. (ISOFORM VEGF206).
RX MEDLINE=92168017; PubMed=1791831;
RA Houck K.A., Ferrara N., Winer J., Cachianes G., Li B., Leung D.W.;
RT "The vascular endothelial growth factor family: identification of a fourth molecular species and characterization of alternative splicing of RNA.";
RN Mol. Endocrinol. 5:1806-1814(1991).
RN [5]
RP SEQUENCE FROM N.A. (ISOFORM VEGF165).
RX MEDLINE=92231879; PubMed=1567395;
RA Weindel K., Marne D., Weich H.A.;
RT "AIDS-associated Kaposi's sarcoma cells in culture express vascular endothelial-growth factor.";
RL Biochem. Biophys. Res. Commun. 183:1167-1174(1992).
RN [6]
RP SEQUENCE FROM N.A. (ISOFORM VEGF145).
RX MEDLINE=97207275; PubMed=9054410;

RA Poltorak Z., Cohen T., Sivan R., Kandelis Y., Spira G., Vlodavsky I.,
 RA Keshet E., Neufeld G.;
 RT "VEGF145, a secreted vascular endothelial growth factor isoform that
 RT binds to extracellular matrix.";
 RL J. Biol. Chem. 272:7151-7158(1997).
 RN [7]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF183).
 RC TISSUE=Kidney;
 RX MEDLINE=99096474; PubMed=9878851;
 RA Lei J., Jiang A., Pei D.;
 RA "Identification and characterization of a new splicing variant of
 RT vascular endothelial growth factor: VEGF183.";
 RT Biochim. Biophys. Acta 1443:400-406(1998).
 RL [8]
 RN SEQUENCE FROM N.A. (ISOFORM VEGF165).
 RP TISSUE=Breast;
 RX MEDLINE=98119755; PubMed=9450968;
 RA Claffey K.P., Shih S.-C., Mullen A., Dziennis S., Cusick J.L.,
 RA Abrams K.R., Lee S.W., Detmar M.;
 RT "Identification of a human VPF/VEGF 3' untranslated region mediating
 RT hypoxia-induced mRNA stability.";
 RL Mol. Biol. Cell 9:469-481(1998).
 RN [9]
 RP SEQUENCE OF 114-209 FROM N.A. (ISOFORM VEGF183).
 RC TISSUE=Retina;
 RX MEDLINE=99165303; PubMed=10067980;
 RA Jingjing L., Xue Y., Agarwal N., Roque R.S.;
 RA "Human Muller cells express VEGF183, a novel spliced variant of
 RT vascular endothelial growth factor.";
 RT Invest. Ophthalmol. Vis. Sci. 40:752-759(1999).
 RL [10]
 RN SEQUENCE FROM N.A. (ISOFORM VEGF165).
 RP TISSUE=Hemangioidendoloma;
 RA Murata H., Fukushima J., Hattori S., Okuda K., Yanagi H.;
 RA "Human cDNA for the vascular endothelial growth factor isoform
 RT VEGF165.";
 RT Submitted (DEC-1998) to the EMBL/GenBank/DBJ databases.
 RL [11]
 RN SEQUENCE FROM N.A. (ISOFORM VEGF148).
 RP TISSUE=Renal glomerulus;
 RX MEDLINE=99394945; PubMed=10464055;
 RA Whittle C.J., Gillespie K.M., Harrison R., Mathieson P.W.,
 RA Harper S.J.;
 RT "Heterogeneous vascular endothelial growth factor (VEGF) isoform mRNA
 RT and receptor mRNA expression in human glomeruli, and the
 RT identification of VEGF148 mRNA, a novel truncated splice variant.";
 RL Clin. Sci. 97:303-312(1999).
 RN [12]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF121).
 RA Sato J.D., Whitney R.G.;
 RT "Human cDNA for vascular endothelial growth factor isoform VEGF121.";
 RT Submitted (DEC-1999) to the EMBL/GenBank/DBJ databases.
 RL [13]
 RN SEQUENCE FROM N.A.
 RP Williams S.;
 RA Submitted (DEC-2000) to the EMBL/GenBank/DBJ databases.
 RL [14]
 RN SEQUENCE OF 23-232 FROM N.A. (VEGF165).
 RA Rieder M.J., Arnel T.Z., Carrington D.P., Chung M.-W., Lee K.L.,
 RA Poel C.L., Oth E.J., Yi Q., Nickerson D.A.;
 RT Submitted (Oct-2001) to the EMBL/GenBank/DBJ databases.
 RL [15]
 RN PRELIMINARY SEQUENCE OF 27-36; 43-50 AND 59-81.
 RX MEDLINE=90062112; PubMed=2584205;
 RA Connolly D.T., Olander J.V., Heuvelman D., Nelson R., Monsell R.,
 RA Siegel N., Haymore B.L., Leingruber R., Feder J.;
 RT "Human vascular permeability factor: Isolation from U937 cells.";
 RL J. Biol. Chem. 264:20017-20024(1989).
 RN [16]
 RN SEQUENCE OF 27-41.
 RX MEDLINE=93145946; PubMed=7678805;
 RA Fiebig B.L., Jaeger B., Schoellmann C., Weindel K., Wiltling J.,
 RA Kochs G., Marne D., Hug H., Weich H.A.;

RT "Synthesis and assembly of functionally active human vascular
 RT endothelial growth factor homodimers in insect cells.";
 RL Eur. J. Biochem. 211:19-26(1993).
 RN [17]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.
 RX MEDLINE=97352774; PubMed=9207067;
 RA Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,
 RA de Vos A.M.;
 RT "Vascular endothelial growth factor: crystal structure and functional
 RT mapping of the kinase domain receptor binding site.";
 RL Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).
 RN [18]
 RP X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.
 RX MEDLINE=98035455; PubMed=9351807;
 RA Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;
 RT "The crystal structure of vascular endothelial growth factor (VEGF)
 RT refined to 1.93-A resolution: multiple copy flexibility and receptor
 RT binding.";
 RL Structure 5:1325-1338(1997).
 RN [19]
 RP X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 39-134.
 RX MEDLINE=99119204; PubMed=9922142;
 RA Wiesmann C., Christinger H.W., Cochran A.G., Cunningham B.C.,
 RA Fairbrother W.J., Keenan C.J., Meng G., de Vos A.M.;
 RT "Crystal structure of the complex between VEGF and a receptor-blocking
 RT peptide.";
 RL Biochemistry 37:17765-17772(1998).
 RN [20]
 RP STRUCTURE BY NMR OF 34-135.
 RX MEDLINE=97477915; PubMed=9336848;
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
 RA Starovasnik M.A.;
 RT "1H, 13C, and 15N backbone assignment and secondary structure of the
 RT receptor-binding domain of vascular endothelial growth factor.";
 RL Protein Sci. 6:2250-2260(1997).
 RN [21]
 RP STRUCTURE BY NMR OF 137-215.
 RX MEDLINE=98298440; PubMed=9634701;
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
 RA Starovasnik M.A.;
 RT "Solution structure of the heparin-binding domain of vascular
 RT endothelial growth factor.";
 RL Structure 6:637-648(1998).
 RN [22]
 RP FUNCTION.
 RX MEDLINE=21320570; PubMed=11427521;
 RA Murphy J.F., Fitzgerald D.J.;
 RT "Vascular endothelial growth factor induces cyclooxygenase-dependent
 RT proliferation of endothelial cells via the VEGF-2 receptor.";
 RL FASEB J. 15:1667-1669(2001).
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 CC endothelial cell growth. It induces endothelial cell
 CC proliferation, promotes cell migration, inhibits apoptosis, and
 CC induces permeabilization of blood vessels. It binds to the
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 CC heparin. Neuropilin-1 binds isoforms VEGF-165 and VEGF-145.
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 CC with PLGF (By similarity).
 CC -!- SUBCELLULAR LOCATION: VEGF121 is acidic and freely secreted.
 CC VEGF165 is more basic, has heparin-binding properties and,
 CC although a significant proportion remains cell-associated, most is
 CC freely secreted. VEGF189 is very basic; it is cell-associated
 CC after secretion and is bound avidly by heparin and the
 CC extracellular matrix, although it may be released as a soluble
 CC form by heparin, heparinase or plasmin.
 CC -!- ALTERNATIVE PRODUCTS:
 CC Event=Alternative splicing; Named isoforms=7;
 CC Comment=Experimental confirmation may be lacking for some
 CC isoforms:
 CC Name=VEGF206;
 CC IsoId=PI5692-1; Sequence=Displayed;
 CC Name=VEGF189;
 CC IsoId=PI5692-2; Sequence=VSP_004622;

Query Match 80.0%; Score 88; DB 1; Length 232;
 Best Local Similarity 80.0%; Pred. No. 6.8e-07;
 Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVFEDVLRSSCHPIE 20
 ||||| : : : : :
 DB 37 HHEVVFMDVYRSYCHPIE 56

RESULT 2

VEGA_MESAU STANDARD; PRT; 190 AA.
 ID VEGA_MESAU Q99PS1;
 AC Q99PS1;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 15-SEP-2003 (Rel. 42, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
 GN VEGF OR VEGFA.
 OS Mesocricetus auratus (Golden hamster).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
 OC Mesocricetus.
 OC NCBI_TaxID=10036;
 OX [1]
 RN SEQUENCE FROM N.A.
 RP TISSUE=Decidua, and Embryo;
 RX MEDLINE=93311285; PubMed=10382276;
 RA Yi X.J., Jiang H.Y., Lee K.K., Tang P.L., Chow P.H.;
 RT "Expression of vascular endothelial growth factor (VEGF) and its receptors during embryonic implantation in the golden hamster (Mesocricetus auratus).";
 RT Cell Tissue Res. 296:339-349(1999).
 RL [1]
 CC -1- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).
 CC -1- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PlGF (By similarity).
 CC -1- SUBCELLULAR LOCATION: Secreted; but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).
 CC
 CC EMBL; AF063013; AAK00049.1;
 DR HSPSP; P15692; 1VGH.
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam: PF00341; PDGF; 1.
 DR ProDom: PD001629; PD_growth_factor; 1.
 DR SMART: SM00141; PDGF; 1.
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS02078; PDGF_2; 1.
 DR KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Multigene family;
 FT SIGNAL 1 26
 FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 BY SIMILARITY.
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC. .) (POTENTIAL).

SQ SEQUENCE 190 AA; 22276 MW; F00C5A8EA79A465F CRC64;

Query Match 66.4%; Score 73; DB 1; Length 190;
 Best Local Similarity 73.7%; Pred. No. 0.00014;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

QY 2 HHEVVFEDVLRSSCHPIE 20
 ||||| : : : : :
 DB 37 HHEVVFMDVYRSYCHPIE 55

RESULT 3

VEGA_BOVIN STANDARD; PRT; 190 AA.
 ID VEGA_BOVIN P15691;
 AC P15691;
 DT 01-APR-1990 (Rel. 14, Created)
 DT 01-APR-1990 (Rel. 14, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
 GN VEGF OR VEGFA.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae;
 OC NCBI_TaxID=9913;
 OX [1]
 RN SEQUENCE FROM N.A.; AND SEQUENCE OF 27-47.
 RP MEDLINE=90069608; PubMed=2479986;
 RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
 RT "Vascular endothelial growth factor is a secreted angiogenic mitogen.";
 RT Science 246:1306-1309(1989).
 RL [2]
 CC -1- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).
 CC -1- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PlGF (By similarity).
 CC -1- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
 CC -1- ALTERNATIVE PRODUCTS:
 CC Event-Alternative splicing; Named isoforms=2;
 CC Name=Alpha;
 CC IsoId=P15691-1; Sequence=Displayed;
 CC Name=Beta;
 CC IsoId=P15691-2; Sequence=VSP_004613, VSP_004614;
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).
 CC
 CC EMBL; AF063013; AAK00049.1;
 DR HSPSP; P15692; 1VGH.
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam: PF00341; PDGF; 1.
 DR ProDom: PD001629; PD_growth_factor; 1.
 DR SMART: SM00141; PDGF; 1.
 DR PROSITE: PS00249; PDGF_1; 1.
 DR PROSITE: PS02078; PDGF_2; 1.
 DR KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Multigene family;
 FT SIGNAL 1 26
 FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 BY SIMILARITY.
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC. .) (POTENTIAL).

or send an email to license@isb-sib.ch).

CC EMBL: M32976; AAA30502.1; .
 CC EMBL: M31836; AAA30804.1; .
 CC EMBL: M33750; AAA30805.1; .
 CC PIR: B40080; B40080.
 CC HSSP: P15692; 1VGH.
 CC InterPro: IPR000072; PD_growth_factor.
 CC Pfam: PF00341; PDGF; 1.
 CC ProDom: PD001629; PD_growth_factor; 1.
 CC SMART: SM00141; PDGF; 1.
 CC PROSITE: PS00249; PDGF_1; 1.
 CC PROSITE: PS00278; PDGF_2; 1.
 CC Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 CC Heparin-binding; Alternative splicing; Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 BY SIMILARITY.
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT VARSPLIC 139 183 Missing (in isoform Beta).
 FT VARSPLIC 184 184 /FTID-VSP_004613.
 FT R -> K (in isoform Beta).
 FT /FTID-VSP_004614.
 FT SEQUENCE 190 AA; 22310 MW; EDBF903E46E24789 CRC64;
 Query Match 65.5%; Score 72; DB 1; Length 190;
 Best Local Similarity 73.7%; Pred. No. 0.0002;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
 ||||| | : || | |||
 DB 37 HEVVKFMDVYQSFRCPIE 55

RESULT 4
 ID VEGA_HORSE STANDARD; PRT; 190 AA.
 AC Q9GRR0:
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
 DE VEGF OR VEGFA.
 GN Equus caballus (Horse).
 OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 OX NCBI_TaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Miura N., Misumi K., Kawahara K., Nakashima M., Fukumitsu S., Kawabata H., Uto T., Oka T., Maruyama I., Sakamoto H.;
 RT "Cloning of cDNA and high-level expression of equine vascular endothelial growth factor (VEGF)."
 RL Submitted (JAN-2001) to the EMBL/GenBank/DBJ databases.
 CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial cell growth. Induces endothelial proliferation, and vascular permeability (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with pLGF (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way

modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).

CC EMBL: AB053350; BAB20890.1;
 CC HSSP: P15692; 1VGH.
 CC InterPro: IPR000072; PD_growth_factor.
 CC Pfam: PF00341; PDGF; 1.
 CC ProDom: PD001629; PD_growth_factor; 1.
 CC SMART: SM00141; PDGF; 1.
 CC PROSITE: PS00249; PDGF_1; 1.
 CC PROSITE: PS00278; PDGF_2; 1.
 CC Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 CC Multigene family.
 FT SIGNAL 1 26
 FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 BY SIMILARITY.
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC. .) (POTENTIAL).
 FT SEQUENCE 190 AA; 22312 MW; 87E9E161439ESF87 CRC64;
 Query Match 65.5%; Score 72; DB 1; Length 190;
 Best Local Similarity 73.7%; Pred. No. 0.0002;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
 ||||| | : || | |||
 DB 37 HEVVKFMDVYQSFRCPIE 55

RESULT 5
 ID VEGA_PIG STANDARD; PRT; 190 AA.
 AC P49151; Q9GLS2:
 DT 01-FEB-1996 (Rel. 33, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
 DE VEGF OR VEGFA.
 GN Sus scrofa (Pig).
 OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Heart;
 RX MEDLINE=95143284; PubMed=7841203;
 RA Sharma H.S., Tang Z.H., Gho B.C.H., Verdouw P.D.;
 RT "Nucleotide sequence and expression of the porcine vascular endothelial growth factor."
 RL Biochim. Biophys. Acta 1260:235-238(1995).
 RN [2]
 RP SEQUENCE FROM N.A.
 RA Lee T., Canty J.M.;
 RT "PCR cloning of porcine cardiac vascular endothelial growth factor gene."
 RL Submitted (NOV-2000) to the EMBL/GenBank/DBJ databases.
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with pLGF (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.

```

CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; X81380; CAA57143.1;
CC EMBL; AF318502; AAG33064.1;
CC PIR; S52130; S52130.
CC HSSP; P15692; IVGH.
CC InterPro; IPR000072; PD_growth_factor.
CC Pfam; PF00341; PDGF; 1.
CC ProDom; PD001629; PD_growth_factor; 1.
CC SMART; SM00141; PDGF; 1.
CC PROSITE; PS00249; PDGF_1; 1.
CC PROSITE; PS0278; PDGF_2; 1.
CC KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
CC Heparin-binding; Multigene family.
CC FT SIGNAL 1 26
CC FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
CC FT DISULFID 51 93
CC FT DISULFID 82 127
CC FT DISULFID 86 129
CC FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
CC FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
CC FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (POTENTIAL).
CC FT CONFLICT 102 102 T -> A (IN REF. 2).
CC SQ SEQUENCE 190 AA; 23368 MW; 04D40B8D7913047F CRC64;

Query Match 65.5%; Score 72; DB 1; Length 190;
Best Local Similarity 73.7%; Pred. No. 0.0002;
Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

Oy 2 HEVVKFEDVLRSSCHPIE 20
Db 37 HEVVKFMDVQYRSYCRPIE 55

RESULT 6
VEGA_CANFA STANDARD; PRT; 214 AA.
ID Q9MWV3; Q9XSF3; Q9XSF4; Q9XSF5;
AC 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
DE permeability factor) (VPF).
GN VEGF OR VEGFA.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORM VEGF-188).
RX MEDLINE-20125516; PubMed=10661874;
RA Scheidegger P., Weighlofer W., Sautrez S., Kaser-Hotz B., Steiner R.,
RA Ballmer-Hofer K., Jausssi R.;
RT "Vascular endothelial growth factor (VEGF) and its receptors in tumor-
RT bearing dogs."
RL Biol. Chem. 380:1449-1454(1999).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORMS VEGF-188; VEGF-182 AND VEGF-164).
RC TISSUE=Heart;
RA Jingjing L., Roque R.S.;
RA Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
CC endothelial cell growth. It induces endothelial cell
CC proliferation, promotes cell migration, inhibits apoptosis, and
CC induces permeabilization of blood vessels. It binds to the
CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and

```

```

CC heparin (By similarity).
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
CC with PLGF (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or
CC to the extracellular matrix unless released by heparin (By
CC similarity).
CC -!- ALTERNATIVE PRODUCTS:
CC Event-Alternative splicing; Named isoforms=3;
CC Name=VEGF-188;
CC IsoId=Q9MWV3-1; Sequence=Displayed;
CC Name=VEGF-182;
CC IsoId=Q9MWV3-2; Sequence=VSP_004617;
CC Name=VEGF-164;
CC IsoId=Q9MWV3-3; Sequence=VSP_004615, VSP_004616;
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; AJ133758; CAB82426.1;
CC EMBL; AF133250; AAD29684.1;
CC EMBL; AF133249; AAD29683.1;
CC EMBL; AF133248; AAD29682.1;
CC HSSP; P15692; IVGH.
CC InterPro; IPR000072; PD_growth_factor.
CC Pfam; PF00341; PDGF; 1.
CC ProDom; PD001629; PD_growth_factor; 1.
CC SMART; SM00141; PDGF; 1.
CC PROSITE; PS00249; PDGF_1; 1.
CC PROSITE; PS0278; PDGF_2; 1.
CC KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
CC Heparin-binding; Alternative
CC SIGNAL 1 26
CC FT CHAIN 27 214 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
CC FT DISULFID 51 93
CC FT DISULFID 82 127
CC FT DISULFID 86 129
CC FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
CC FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
CC FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (POTENTIAL).
CC FT VARSPLIC 140 140
CC FT VARSPLIC 141 164 Missing (in isoform VEGF-164).
CC FT VARSPLIC 159 164 Missing (in isoform VEGF-182).
CC FT CONFLICT 143 143 I -> V (IN REF. 2).
CC FT CONFLICT 161 161 P -> S (IN REF. 2).
CC SQ SEQUENCE 214 AA; 25175 MW; 0AC980A158C44B27 CRC64;

Query Match 65.5%; Score 72; DB 1; Length 214;
Best Local Similarity 73.7%; Pred. No. 0.00023;
Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

Oy 2 HEVVKFEDVLRSSCHPIE 20
Db 37 HEVVKFMDVQYRSYCRPIE 55

RESULT 7
VEGA_RAT STANDARD; PRT; 214 AA.
ID P16612; Q9JKX7; Q9XG6; Q9XG7;
AC 01-AUG-1990 (Rel. 15, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular

```

DE permeability factor) (VPF).
 GN VEGF OR VEGFA.
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=10116;
 RN [1]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF-A164); AND SEQUENCE OF 27-190.
 RX MEDLINE=90207249; PubMed=2320579;
 RA Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
 RA Palisi T.M., Hope D.A., Thomas K.A.;
 RT "Amino acid and cDNA sequences of a vascular endothelial cell mitogen
 RT that is homologous to platelet-derived growth factor.";
 RT Proc. Natl. Acad. Sci. U.S.A. 87:2628-2633(1990).
 RN [2]
 RP SEQUENCE FROM N.A. (ISOFORMS VEGF-A188; VEGF-A164; VEGF-A144 AND
 RP VEGF-A120).
 RA Ishii H., Arakawa T., Okayama M., Oota I., Takuma T., Inomata K.;
 RT "Developmental expression of vascular endothelial growth factor-A
 RT (VEGF-A) splicing variants, VEGF-A188, VEGF-A164, and VEGF-A120 in rat
 RT masseter muscle.";
 RT Submitted (DEC-1999) to the EMBL/GenBank/DBJ databases.
 RN [3]
 RP SEQUENCE OF 27-40.
 RC TISSUE=Glial tumor;
 RX MEDLINE=95221439; PubMed=7706320;
 RA Disalvo J., Bayne M.L., Conn G., Kwok P.W., Trivedi P.G.,
 RA Soderman D.D., Palisi T.M., Sullivan K.A., Thomas K.A.;
 RT "Purification and characterization of a naturally occurring vascular
 RT endothelial growth factor/placenta growth factor heterodimer.";
 RT J. Biol. Chem. 270:7717-7723(1995).
 CC -1- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 CC endothelial cell growth. It induces endothelial cell
 CC proliferation, promotes cell migration, inhibits apoptosis, and
 CC induces permeabilization of blood vessels. It binds to the
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 CC heparin (By similarity).
 CC -1- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 CC with PLGF (By similarity).
 CC -1- SUBCELLULAR LOCATION: VEGF-A120 is acidic and freely secreted.
 CC VEGF-A164 is more basic, has heparin-binding properties and,
 CC although a significant proportion remains cell-associated, most is
 CC freely secreted. VEGF-A188 is very basic; it is cell-associated
 CC after secretion and is bound avidly by heparin and the
 CC extracellular matrix, although it may be released as a soluble
 CC form by heparin, heparinase or plasmin (By similarity).
 CC -1- ALTERNATIVE PRODUCTS:
 CC Event-Alternative splicing; Named isoforms=4;
 CC Comment=Additional isoforms seem to exist;
 CC Name=VEGF-A188;
 CC IsoId=PI6612-1; Sequence=Displayed;
 CC Name=VEGF-A164;
 CC IsoId=PI6612-2; Sequence=VSP_004629, VSP_004630;
 CC Name=VEGF-A144;
 CC IsoId=PI6612-3; Sequence=VSP_004632;
 CC Name=VEGF-A120;
 CC IsoId=PI6612-4; Sequence=VSP_004631;
 CC -1- TISSUE SPECIFICITY: Expressed in the pituitary, in brain, in
 CC particularly in supraoptic and paraventricular nuclei and the
 CC choroid plexus. Also found abundantly in the corpus luteum of the
 CC ovary and in kidney glomeruli.
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement. (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).

DR EMBL; AF215726; AAF19212.1; -
 DR EMBL; AF222779; AAF25958.1; -
 DR HSSP; P15692; IVPF.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF_1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF_1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Alternative splicing; Multigene family.
 FT SIGNAL 1 26 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
 FT CHAIN 27 214 BY SIMILARITY.
 FT DISULFID 51 93 BY SIMILARITY.
 FT DISULFID 82 127 BY SIMILARITY.
 FT DISULFID 86 129 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
 FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
 FT CARBOHYD 100 100 N-LINKED (GLCNAC...).
 FT VARSPPLIC 140 140 K<-> N (in isoform VEGF-A164).
 FT VARSPPLIC 141 164 /FTId=VSP_004629.
 FT VARSPPLIC 141 164 Missing (in isoform VEGF-A164).
 FT VARSPPLIC 141 208 /FTId=VSP_004630.
 FT VARSPPLIC 141 208 Missing (in isoform VEGF-A120).
 FT VARSPPLIC 165 208 /FTId=VSP_004631.
 FT VARSPPLIC 165 208 Missing (in isoform VEGF-A144).
 FT CONFLICT 101 101 V-> A (IN REF. 2: AAF19212).
 SQ SEQUENCE 214 AA; 25239 MW; 60FBB876F5304946 CRC64;
 Query Match 65.5%; Score 72; DB 1; Length 214;
 Best Local Similarity 73.7%; Pred. No. 0.00023;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Caps 0;
 QY 2 HEVVKFEDVLRSSCHPIE 20
 Db 37 HEVVKFMDVYORSYCRPIE 55
 RESULT 8
 VEGA_MOUSE
 ID VEGA_MOUSE STANDARD; PRT; 214 AA.
 AC Q00731;
 DT 01-APR-1993 (Rel. 25, Created)
 DT 01-OCT-1996 (Rel. 34, Last sequence update)
 DT 15-SEP-2003 (Rel. 42, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
 DE permeability factor) (VPF).
 GN VEGF OR VEGFA.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A. (ISOFORMS VEGF-1; VEGF-2 AND VEGF-3).
 RX MEDLINE=92274860; PubMed=1592003;
 RA Breier G., Albrrecht U., Sterrer S., Risau W.;
 RT "Expression of vascular endothelial growth factor during embryonic
 RT angiogenesis and endothelial cell differentiation.";
 RT Development 114:521-532(1992).
 RN [2]
 RP SEQUENCE FROM N.A. (ISOFORM VEGF-1).
 RX MEDLINE=92355593; PubMed=1644816;
 RA Claffey K.P., Wilkison W.O., Spiegelman B.M.;
 RT "Vascular endothelial growth factor. Regulation by cell
 RT differentiation and activated second messenger pathways.";
 RL J. Biol. Chem. 267:16317-16322(1992).
 RN [3]
 RP SEQUENCE OF 1-3 FROM N.A.
 RX MEDLINE=96216498; PubMed=8632007;
 RA Shima D.T., Kuroki M., Deutsch U., Ng Y., Adamis A.P., D'Amore P.A.;
 RT "The mouse gene for vascular endothelial growth factor. Genomic
 RT structure, definition of the transcriptional unit, and

RT RT Characterization of transcriptional and post-transcriptional regulatory sequences.;

RL J. Biol. Chem. 271:3877-3883(1996).

CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).

CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PLGF (By similarity).

CC -!- SUBCELLULAR LOCATION: VEGF-1 and VEGF-2 are secreted while VEGF-3 remains cell-surface associated unless released by heparin.

CC -!- ALTERNATIVE PRODUCTS:

CC Event-Alternative splicing: Named isoforms=3;

CC Name=VEGF-3; Synonyms=VEGF188;

CC IsoId=Q00731-1; Sequence=Displayed;

CC Name=VEGF-1; Synonyms=VEGF164;

CC IsoId=Q00731-2; Sequence=VSP_004626; VSP_004627;

CC Name=VEGF-2; Synonyms=VEGF120;

CC IsoId=Q00731-3; Sequence=VSP_004628;

CC -!- TISSUE SPECIFICITY: In developing embryos, expressed mainly in the choroid plexus, paraventricular neuroepithelium, placenta and kidney glomeruli. Also found in bronchial epithelium, adrenal gland and in seminiferous tubules of testis. High expression of VEGF continues in kidney glomeruli and choroid plexus in adults.

CC -!- DOMAIN: VEGF-3 contains a basic insert which acts as a cell retention signal.

CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.

CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).

DR EMBL; S37052; AAB22252.1; -;

DR EMBL; S38083; AAB22253.1; -;

DR EMBL; S38100; AAB22254.1; -;

DR EMBL; M95200; AAA40347.1; -;

DR EMBL; U41383; -; NOT_ANNOTATED_CDS.

DR PIR; A44881; A44881.

DR PIR; B44881; B44881.

DR HSSP; PL5692; 2VPF.

DR MGI; MGI:103178; vegfa.

DR InterPro; IPR000072; PD_growth_factor.

DR Pfam; PF00341; PDGF; 1.

DR ProDom; PD001629; PD_growth_factor; 1.

DR SMART; SM00141; PDGF; 1.

DR PROSITE; PS00249; PDGF_1; 1.

DR PROSITE; PS02078; PDGF_2; 1.

DR Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal; Heparin-binding; Alternative splicing; Multigene family.

FT SIGNAL 1 26 BY SIMILARITY.

FT CHAIN 27 214 VASCULAR ENDOTHELIAL GROWTH FACTOR A.

FT DISULFID 51 93 BY SIMILARITY.

FT DISULFID 82 127 BY SIMILARITY.

FT DISULFID 86 129 BY SIMILARITY.

FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).

FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).

FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (PROBABLE).

FT VARSPPLIC 140 140 K-> N (in isoform VEGF-1).

FT VARSPPLIC 141 164 /FTId-VSP_004626.

FT VARSPPLIC 141 208 Missing (in isoform VEGF-1).

FT VARSPPLIC 141 208 /FTId-VSP_004627.

FT VARSPPLIC 141 208 Missing (in isoform VEGF-2).

FT VARSPPLIC 141 208 /FTId-VSP_004628.

FT CONFLICT 117 118 GE -> ER (IN REF. 2).

FT SEQUENCE 214 AA: 25283 MW: B5540B51E4BB6E17 CRC64;

Query Match 64.5%; Score 71; DB 1; Length 214;

Best Local Similarity 68.4%; Pred. No. 0.00033;

Matches 13; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 2 HEVVKFEDVLRSSCHPIE 20

DB 37 HEVVKFEDVLRSSCHPIE 55

RESULT 9

VEGA_SHEEP STANDARD; PRT; 146 AA.

ID VEGA_SHEEP

AC PS0412;

DT 01-OCT-1996 (Rel. 34, Created)

DT 01-OCT-1996 (Rel. 34, Last sequence update)

DT 28-FEB-2003 (Rel. 41, Last annotation update)

DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF)

DE VEGF OR VEGFA.

GN Ovis aries (Sheep).

OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae; Caprinae; Ovis.

OX NCBI_TaxID=9940;

XX [1]

RN SEQUENCE FROM N.A.

RC TISSUE=Kidney;

RX MEDLINE=971117958; PubMed=8958842;

RA Redmer D.A., Dai Y., Li J., Charnock-Jones D.S., Smith S.K., Reynolds L.P., Moor R.M.;

RA "Characterization and expression of vascular endothelial growth factor (VEGF) in the ovine corpus luteum.";

RL J. Reprod. Fertil. 108:157-165(1996).

CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).

CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PLGF (By similarity).

CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.

CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).

DR EMBL; X89506; CAA61677.1; -;

DR PIR; S57956; S57956.

DR HSSP; PL5692; 1VPP.

DR InterPro; IPR000072; PD_growth_factor.

DR Pfam; PF00341; PDGF; 1.

DR ProDom; PD001629; PD_growth_factor; 1.

DR SMART; SM00141; PDGF; 1.

DR PROSITE; PS00249; PDGF_1; 1.

DR PROSITE; PS02078; PDGF_2; 1.

DR Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal; Heparin-binding; Multigene family.

FT SIGNAL 1 26 BY SIMILARITY.

FT CHAIN 27 146 VASCULAR ENDOTHELIAL GROWTH FACTOR A.

FT DISULFID 51 93 BY SIMILARITY.

FT DISULFID 82 127 BY SIMILARITY.

FT DISULFID 86 129 BY SIMILARITY.

FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).

FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).

FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (POTENTIAL).

FT SEQUENCE 146 AA: 17247 MW: 4E792CB557F91760 CRC64;

Query Match 62.7%; Score 69; DB 1; Length 146;

Best Local Similarity 68.4%; Pred. No. 0.00046;

Matches 13; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

Oy 2 HEVVKFEDVLRSSCHPIE 20
 III:II II :II I III
 Db 37 HEVVKFMDVYQSRCPRIE 55

RESULT 10
 ID VEGA_CAVPO STANDARD: PRT: 164 AA.
 AC P26617;
 DT 01-AUG-1992 (Rel. 23, Created)
 DT 01-AUG-1992 (Rel. 23, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Vascular endothelial growth factor A (VEGF-A) (Vascular permeability factor) (VPF).
 DE VEGF OR VEGFA.
 GN Cavia porcellus (Guinea pig).
 OS Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Hystriognathi; Caviidae; Cavia.
 OC NCBI_TaxID-10141;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE-Bile duct;
 RA Berse B.;

RL Submitted (JAN-1992) to the EMBL/GenBank/DBJ databases.
 CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial cell growth. Induces endothelial proliferation and vascular permeability (By similarity).
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PLGF (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.

 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).

 EMBL; M84230; AAA37057.1; -
 DR HSSP; P15692; 1VGH.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS50278; PDGF_2; 1.
 DR Mitogen; Angiogenesis; Growth factor; Glycoprotein.
 KW Angiogenesis; Mitogen; Growth factor; Glycoprotein; Signal.
 FT CHAIN 1 67
 FT DISULFID 25 67
 FT DISULFID 56 101
 FT DISULFID 60 103
 FT DISULFID 50 50
 FT DISULFID 59 59
 FT CARBOHYD 74 74
 FT SEQUENCE 164 AA; 19330 MW; 9EB86A81A9D5DCA4 CRC64;

Query Match 53.68; Score 59; DB 1; Length 164;
 Best Local Similarity 66.78; Pred. No. 0.021;
 Matches 12; Conservative 1; Mismatches 5; Indels 0; Gaps 0;

Oy 3 EVVKFEDVLRSSCHPIE 20
 I IIII I I I I I I I I
 Db 12 EVVKFMDVYKRSYCRPIE 29

RESULT 11
 ID PLGF_BOVIN STANDARD: PRT: 149 AA.

AC O9XS47;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 15-SEP-2003 (Rel. 42, Last annotation update)
 DE Placenta growth factor precursor (PlGF).
 DE PGF OR PLGF.
 GN Bos taurus (Bovine).
 OS Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID-9913;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE-Heart;
 RA Liu X., Yonekura H., Yamagishi S., Yamamoto Y., Yamamoto H.;
 RT "Structure and expression of bovine VEGF family."
 RT Submitted (MAY-1997) to the EMBL/GenBank/DBJ databases.

CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial cell growth, stimulating their proliferation and migration. It binds to receptor VEGFR-1/PLT1 (By similarity).
 CC -!- SUBUNIT: Antiparallel homodimer; disulfide-linked. Also found as heterodimer with VEGF/VEGF-A (By similarity).
 CC -!- SUBCELLULAR LOCATION: Secreted (By similarity).
 CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.

 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to license@isb-sib.ch).

 EMBL; AB004272; BAA77684.1;
 DR HSSP; P49763; 1FZV.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS50278; PDGF_2; 1.
 DR Angiogenesis; Mitogen; Growth factor; Glycoprotein; Signal.
 FT CHAIN 1 18
 FT CHAIN 19 149
 FT DISULFID 52 94
 FT DISULFID 83 128
 FT DISULFID 87 130
 FT DISULFID 77 77
 FT DISULFID 86 86
 FT CARBOHYD 33 33
 FT CARBOHYD 101 101
 FT SEQUENCE 149 AA; 17094 MW; 1F8EB3B8C745EFE0 CRC64;

Query Match 47.38; Score 52; DB 1; Length 149;
 Best Local Similarity 55.68; Pred. No. 0.25;
 Matches 10; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

Oy 3 EVVKFEDVLRSSCHPIE 20
 III I I I I I I I I
 Db 39 EVVKFQVWSRSYCRPVE 56

RESULT 12
 ID VEGA_CHICK STANDARD: PRT: 216 AA.
 AC P52582; 091420;
 DT 01-OCT-1996 (Rel. 34, Created)
 DT 15-JUL-1998 (Rel. 36, Last sequence update)
 DT 15-SEP-2003 (Rel. 42, Last annotation update)
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
 DE VEGF OR VEGFA.
 GN Gallus gallus (Chicken), and

OS Coturnix coturnix japonica (Japanese quail).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Archosauromorpha; Aves; Neognathae; Galliformes; Phasianinae;
 OC Gallus.
 OX NCBI_TaxID=9031, 93934;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC SPECIES=Chicken; TISSUE=Heart;
 RA Takahashi T.;
 RT "Chick embryonic ventricular myocytes VEGF";
 RL Submitted (FEB-1998) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A. (ISOFORMS VEGF-190; VEGF-166 AND VEGF-146).
 RC SPECIES=C.c.japonica; TISSUE=Embryo;
 RX MEDLINE=96005007; PubMed=7556923;
 RA Flamme I., von Reutern M., Drexler H.C., Syed-Ali S., Risau W.;
 RT "Overexpression of vascular endothelial growth factor in the avian
 embryo induces hypervascularization and increased vascular
 permeability without alterations of embryonic pattern formation.";
 RL Dev. Biol. 171:399-414(1995).
 RN [3]
 RP SEQUENCE OF 60-187 FROM N.A. (ISOFORMS VEGF-190 AND VEGF-166).
 RC SPECIES=C.c.japonica;
 RX MEDLINE=95301109; PubMed=7781909;
 RA Flamme I., Breiter G., Risau W.;
 RT "Vascular endothelial growth factor (VEGF) and VEGF receptor 2
 (flk-1) are expressed during vasculogenesis and vascular
 differentiation in the quail embryo";
 RL Dev. Biol. 169:699-712(1995).
 CC -1- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 endothelial cell growth. It induces endothelial cell
 proliferation, promotes cell migration, inhibits apoptosis, and
 induces permeabilization of blood vessels. It binds to the
 VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 heparin (By similarity).
 CC -1- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 with PlGF (By similarity).
 CC -1- ALTERNATIVE PRODUCTS:
 CC Comment-Additional isoforms seem to exist;
 CC Name=VEGF-190;
 CC IsoId=P52582-1; Sequence=Displayed;
 CC Name=VEGF-166;
 CC IsoId=P52582-2; Sequence=VSP_004633, VSP_004634;
 CC Note=Has been shown to exist only in quail so far;
 CC Name=VEGF-146;
 CC IsoId=P52582-3; Sequence=VSP_004635, VSP_004636;
 CC Note=Has been shown to exist only in quail so far;
 CC -1- TISSUE SPECIFICITY: Abundantly and equally expressed in heart and
 liver. In kidney glomeruli, brain and yolk sac, VEGF-166 is 5- to
 10-times more abundant than VEGF-190.
 CC -1- DEVELOPMENTAL STAGE: VEGF-166 is expressed early at day 1 and is
 upregulated during gastrulation. Expression of VEGF-190 is detectable
 only from day 2.
 CC -1- DOMAIN: VEGF-190 contains a basic insert which acts as a cell
 retention signal.
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 between the Swiss Institute of Bioinformatics and the EMBL outstation -
 the European Bioinformatics Institute. There are no restrictions on its
 use by non-profit institutions as long as its content is in no way
 modified and this statement is not removed. Usage by and for commercial
 entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 or send an email to license@isb-sib.ch).
 CC
 CC EMBL; AB011078; BAA24925.1;
 CC EMBL; S79680; AAB35371.1;
 CC HSP; P15692; IUGH
 CC InterPro: IPR000072; PD_growth_factor.
 CC Pfam: PF00341; PDGF; 1.
 CC ProDom: PD001629; PD_growth_factor; 1.
 CC SMART: SM00141; PDGF; 1.

DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
 KW Heparin-binding; Alternative splicing; Multigene family.
 OX NCBI_TaxID=9031, 93934;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC SPECIES=Chicken; TISSUE=Heart;
 RA Takahashi T.;
 RT "Chick embryonic ventricular myocytes VEGF";
 RL Submitted (FEB-1998) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A. (ISOFORMS VEGF-190; VEGF-166 AND VEGF-146).
 RC SPECIES=C.c.japonica; TISSUE=Embryo;
 RX MEDLINE=96005007; PubMed=7556923;
 RA Flamme I., von Reutern M., Drexler H.C., Syed-Ali S., Risau W.;
 RT "Overexpression of vascular endothelial growth factor in the avian
 embryo induces hypervascularization and increased vascular
 permeability without alterations of embryonic pattern formation.";
 RL Dev. Biol. 171:399-414(1995).
 RN [3]
 RP SEQUENCE OF 60-187 FROM N.A. (ISOFORMS VEGF-190 AND VEGF-166).
 RC SPECIES=C.c.japonica;
 RX MEDLINE=95301109; PubMed=7781909;
 RA Flamme I., Breiter G., Risau W.;
 RT "Vascular endothelial growth factor (VEGF) and VEGF receptor 2
 (flk-1) are expressed during vasculogenesis and vascular
 differentiation in the quail embryo";
 RL Dev. Biol. 169:699-712(1995).
 CC -1- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
 endothelial cell growth. It induces endothelial cell
 proliferation, promotes cell migration, inhibits apoptosis, and
 induces permeabilization of blood vessels. It binds to the
 VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
 heparin (By similarity).
 CC -1- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
 with PlGF (By similarity).
 CC -1- ALTERNATIVE PRODUCTS:
 CC Comment-Additional isoforms seem to exist;
 CC Name=VEGF-190;
 CC IsoId=P52582-1; Sequence=Displayed;
 CC Name=VEGF-166;
 CC IsoId=P52582-2; Sequence=VSP_004633, VSP_004634;
 CC Note=Has been shown to exist only in quail so far;
 CC Name=VEGF-146;
 CC IsoId=P52582-3; Sequence=VSP_004635, VSP_004636;
 CC Note=Has been shown to exist only in quail so far;
 CC -1- TISSUE SPECIFICITY: Abundantly and equally expressed in heart and
 liver. In kidney glomeruli, brain and yolk sac, VEGF-166 is 5- to
 10-times more abundant than VEGF-190.
 CC -1- DEVELOPMENTAL STAGE: VEGF-166 is expressed early at day 1 and is
 upregulated during gastrulation. Expression of VEGF-190 is detectable
 only from day 2.
 CC -1- DOMAIN: VEGF-190 contains a basic insert which acts as a cell
 retention signal.
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 between the Swiss Institute of Bioinformatics and the EMBL outstation -
 the European Bioinformatics Institute. There are no restrictions on its
 use by non-profit institutions as long as its content is in no way
 modified and this statement is not removed. Usage by and for commercial
 entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 or send an email to license@isb-sib.ch).
 CC
 CC EMBL; AB011078; BAA24925.1;
 CC EMBL; S79680; AAB35371.1;
 CC HSP; P15692; IUGH
 CC InterPro: IPR000072; PD_growth_factor.
 CC Pfam: PF00341; PDGF; 1.
 CC ProDom: PD001629; PD_growth_factor; 1.
 CC SMART: SM00141; PDGF; 1.

Query Match 45.58; Score 50; DB 1; Length 216;
 Best Local Similarity 52.6%; Pred. No. 0.77;
 Matches 10; Conservative 3; Mismatches 6; Indels 0; Gaps 0;

QY 2 HEVVKEDVLRSSCHPIE 20
 DB 38 NEVKLEVERSFRTIE 56

RESULT 13

PLGF_MOUSE
 ID PLGF_MOUSE STANDARD; PRT; 158 AA.
 AC P49764;
 DT 01-OCT-1996 (Rel. 34, Created)
 DT 01-OCT-1996 (Rel. 34, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Placenta growth factor precursor (PLGF).
 GN PGF OR PLGF.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Heart;
 RX MEDLINE=97059399; PubMed=8903720;
 RA Dipalma T., Tucci M., Russo G., Maglione D., Lago C.T., Romano A.,
 RA Saccone S., Della Valle G., de Gregorio L., Dragani T.A.,
 RA Viglietto G., Persico M.G.;
 RT "The placenta growth factor gene of the mouse";
 RL Mamm. Genome 7:6-12(1996).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC STRAIN=NTH Swiss;
 RX MEDLINE=98065381; PubMed=9401819;
 RA Achen M.G., Gad J.M., Stacker S.A., Wilks A.F.;
 RT "Placenta growth factor and vascular endothelial growth factor are
 co-expressed during early embryonic development";
 RL Growth Factors 15:69-80(1997).
 CC -1- FUNCTION: Growth factor active in angiogenesis, and endothelial
 cell growth, stimulating their proliferation and migration. It
 binds to receptor VEGFR-1/Flt1 (By similarity).
 CC -1- SUBUNIT: Antiparallel homodimer; disulfide-linked. Also found as
 heterodimer with VEGF/VEGF-A (By similarity).
 CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
 CC -1- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 between the Swiss Institute of Bioinformatics and the EMBL outstation -
 the European Bioinformatics Institute. There are no restrictions on its
 use by non-profit institutions as long as its content is in no way

CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).

DR EMBL; X80171; CAA56453.1; --
 DR EMBL; X96793; CAA65587.1; --
 DR HSSP; P49763; 1F2V.
 DR MGD; MGI:105095; Pgf.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 KW Angiogenesis; Mitogen; Growth factor; Glycoprotein; Signal.
 FT SIGNAL 1 18
 FT CHAIN 19 158
 FT DISULFID 48 90
 FT DISULFID 79 125
 FT DISULFID 83 127
 FT DISULFID 73 73
 FT DISULFID 82 82
 FT CARBOHYD 29 29
 FT CARBOHYD 30 30
 FT CARBOHYD 97 97
 SQ SEQUENCE 158 AA; F16128BEA0790438 CRC64;

Query Match 44.5%; Score 49; DB 1; Length 158;
 Best Local Similarity 55.6%; Pred. No. 0.8;
 Matches 10; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

OY 3 EVKPFEDVLRSSCHPIE 20
 DB 35 EVWPFNEVGRSYCRPME 52

RESULT 14
 ID PLGF_RAT STANDARD; PRT; 158 AA.
 AC Q63434;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DE Placenta growth factor precursor (PlGF).
 GN PlGF.
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=10116;
 RN [1]
 RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
 RA MEDLINE=95221439; PubMed=7706320;
 RA DiSalvo J., Bayne M.L., Conn G., Kwok P.W., Trivedi P.G.,
 RA Soderman D.D., Palisi T.M., Sullivan K.A., Thomas K.A.;
 RT "Purification and characterization of a naturally occurring vascular
 endothelial growth factor/placenta growth factor heterodimer.";
 RL J. Biol. Chem. 270:7171-7173(1995).
 CC !- FUNCTION: Growth factor active in angiogenesis, and endothelial
 CC cell growth, stimulating their proliferation and migration. It
 CC binds to receptor VEGFR-1/Flr1 (By similarity).
 CC !- SUBUNIT: Antiparallel homodimer; disulfide-linked. Also found as
 CC heterodimer with VEGF/VEGF-A.
 CC !- SUBCELLULAR LOCATION: Secreted (By similarity).
 CC !- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).

DR EMBL; L40030; AAA97426.1; --
 DR PIR; A56125; A56125.
 DR HSSP; P49763; 1F2V.
 DR InterPro; IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 KW Angiogenesis; Mitogen; Growth factor; Glycoprotein; Signal.
 FT SIGNAL 1 23
 FT CHAIN 24 158
 FT DISULFID 48 90
 FT DISULFID 79 125
 FT DISULFID 83 127
 FT DISULFID 73 73
 FT DISULFID 82 82
 FT CARBOHYD 29 29
 FT CARBOHYD 30 30
 FT CARBOHYD 97 97
 SQ SEQUENCE 158 AA; B4771373A82E15B9 CRC64;

Query Match 44.5%; Score 49; DB 1; Length 158;
 Best Local Similarity 55.6%; Pred. No. 0.8;
 Matches 10; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

OY 3 EVKPFEDVLRSSCHPIE 20
 DB 35 EVWPFNEVGRSYCRPME 52

RESULT 15
 ID CABL_AQUAE STANDARD; PRT; 557 AA.
 AC Q67869;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Carbamoyl-phosphate synthase large chain, N-terminal section
 DE (EC 6.3.5.5) (Carbamoyl-phosphate synthetase ammonia chain).
 GN CABL OR AQ_2101.
 OS Aquifex aeolicus.
 OC Bacteria; Aquificae; Aquificales; Aquificaceae; Aquifex.
 OX NCBI_TaxID=63363;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=VF5.
 RX MEDLINE=98196666; PubMed=9537320;
 RA Deckert G., Warren P.V., Gaasterland T., Young W.G., Lenox A.L.,
 RA Graham D.E., Overbeek R., Snead M.A., Keller M., Auway M., Huber R.,
 RA Feldman R.A., Short J.M., Olson G.J., Swanson R.V.;
 RT "The complete genome of the hyperthermophilic bacterium Aquifex
 aeolicus.";
 RL Nature 392:353-358(1998).
 CC !- CATALYTIC ACTIVITY: 2 ATP + L-glutamine + CO(2) + H(2)O -> 2 ADP +
 CC phosphate + L-glutamate + carbamoyl phosphate.
 CC !- COFACTOR: Binds 3 manganese ions per subunit (By similarity).
 CC !- PATHWAY: Arginine biosynthesis.
 CC !- SUBUNIT: Pyrimidine biosynthesis; first step.
 CC !- SUBUNIT: Composed of two chains; the small (or glutamine) chain
 CC promotes the hydrolysis of glutamine to ammonia, which is used by
 CC the large (or ammonia) chain to synthesize carbamoyl phosphate (By
 CC similarity).
 CC !- SIMILARITY: BELONGS TO THE CARB FAMILY. N-TERMINAL SECTION.
 CC !- CAUTION: Sequence of carb is split into two genes in A.aeolicus
 CC (AQ_1172 and AQ_2101).

CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@isb-sib.ch).

or send an email to license@sib.ch).

CC -----
DR EMBL: AE000772; AAC07826.1; --
DR PIR: A70480; A70480.
DR HSSP: P00968; LJDB.
DR HAMAP: MF_01210; atypical; 1.
DR InterPro: IPR005483; CPase_L.
DR InterPro: IPR005479; CPase_L_D2.
DR InterPro: IPR005480; CPase_L_D3.
DR InterPro: IPR005481; CPase_L_N.
DR Pfam: PF00289; CPase_L_chain; 1.
DR Pfam: PF02786; CPase_L_D2; 1.
DR Pfam: PF02787; CPase_L_D3; 1.
DR PRINTS: PR00098; CPSASE.
DR PROSITE: PS00866; CPSASE_1; 1.
DR PROSITE: PS00867; CPSASE_2; 1.
KW Arginine biosynthesis; Pyrimidine biosynthesis; Ligase; ATP-binding;
Manganese; Complete proteome.
FT DOMAIN 1 402 CARBOXYPHOSPHATE SYNTHETIC DOMAIN.
FT DOMAIN 403 543 OLIGOMERIZATION DOMAIN.
FT NP_BIND 153 210 ATP (POTENTIAL).
FT NP_BIND 303 353 ATP (POTENTIAL).
FT METAL 285 285 MANGANESE 1 (BY SIMILARITY).
FT METAL 299 299 MANGANESE 1 AND 2 (BY SIMILARITY).
FT METAL 301 301 MANGANESE 2 (BY SIMILARITY).
SQ SEQUENCE 557 AA; 62404 MW; 89C259FDC0170A37 CRC64;

Query Match 44.5%; Score 49; DB 1; Length 557;
Best Local Similarity 56.2%; Pred. No. 3;
Matches 9; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 3 EVVKFEDVLRSSCHP 18
|:|||||:|:
Db 465 EIVKFEVLKKEELTP 480

Search completed: July 24, 2003, 14:46:17
Job time : 16.2941 secs

Result No.	Query	Score	Match	Length	DB	ID	Description
1	88	80.0	126	6	Q9BD7	Q9BD7 macaca mula	
2	88	80.0	191	4	Q96K30	Q96K30 homo sapien	
3	88	80.0	191	4	Q96L82	Q96L82 homo sapien	
4	88	80.0	191	6	Q95NE5	Q95NE5 macaca fusc	
5	85	77.3	190	11	Q9QX39	Q9QX39 spalax leuc	
6	72	65.5	110	11	Q88911	Q88911 rattus norv	
7	72	65.5	124	6	Q8SP29	Q8SP29 sus scrofa	
8	72	65.5	184	6	Q8HY70	Q8HY70 mustela vis	
9	72	65.5	189	6	Q95L04	Q95L04 felis silve	
10	72	65.5	190	11	Q91ZE1	Q91ZE1 rattus norv	
11	71	64.5	141	11	Q70123	Q70123 mus musculu	
12	69	62.7	118	6	Q9MZB1	Q9MZB1 ovis aries	
13	69	62.7	190	6	Q77643	Q77643 ovis aries	
14	64	58.2	128	6	Q8SP15	Q8SP15 equus cabal	
15	63	57.3	124	6	Q9GK00	Q9GK00 callithrix	
16	49.5	45.0	294	10	Q8LAU5	Q8LAU5 arabidopsis	

```

RESULT 2
Q96KJ0          PRELIMINARY;      PRT; 191 AA.
ID Q96KJ0;
AC Q96KJ0;
DT 01-DEC-2001 (TEMBLrel. 19, Created)
DT 01-DEC-2001 (TEMBLrel. 19, Last sequence update)
DT 01-MAR-2003 (TEMBLrel. 23, Last annotation update)
DE Vascular endothelial growth factor 165b.
OS Homo sapiens (human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
OX NCBI_TaxID=9606;
RN [1];
RP SEQUENCE FROM N.A.
RC TISSUE=Kidney;
RA Sugiono M., Winkler M., Gillatt D., Harper S.J., Bates D.O.;
RT "A new isoform of vascular endothelial growth factor mRNA is down-
RT regulated in renal tumors.";
RL (In) Unknown A. (eds.);
RL Proceedings of the 7th World Congress on Microcirculation, pp.3-3,
RL Sydney, Australia (2001).
RL EMBL; AF430806; AAL27435.1;
DR InterPro: IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF_1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR ProSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
SQ SEQUENCE 191 AA; 22258 MW; D25243E540AC79BD CRC64;

Query Match 80.0%; Score 88; DB 4; Length 191;
Best Local Similarity 80.0%; Pred. No. 2.5e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
DB 37 HHEVVKFMDYQRSYCHPIE 56

RESULT 3
Q96L82          PRELIMINARY;      PRT; 191 AA.
ID Q96L82;
AC Q96L82;
DT 01-DEC-2001 (TEMBLrel. 19, Created)
DT 01-DEC-2001 (TEMBLrel. 19, Last sequence update)
DT 01-OCT-2002 (TEMBLrel. 22, Last annotation update)
DE Vascular endothelial growth factor.
GN VEGF.
OS Homo sapiens (human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
OX NCBI_TaxID=9606;
RN [1];
RP SEQUENCE FROM N.A.
RA Liu J., Peng X., Yuan J., Qiang B.;
RT "Cloning of vascular endothelial growth factor (VEGF) cDNA.";
RL Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.
RL EMBL; AY047581; AAK95847.1;
DR InterPro: IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
SQ SEQUENCE 191 AA; 22314 MW; CCE57097DD3779BD CRC64;

Query Match 80.0%; Score 88; DB 4; Length 191;
Best Local Similarity 80.0%; Pred. No. 2.5e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
DB 37 HHEVVKFMDYQRSYCHPIE 56

RESULT 4
Q95NE5          PRELIMINARY;      PRT; 191 AA.
ID Q95NE5;
AC Q95NE5;
DT 01-DEC-2001 (TEMBLrel. 19, Created)
DT 01-DEC-2001 (TEMBLrel. 19, Last sequence update)
DT 01-OCT-2002 (TEMBLrel. 22, Last annotation update)
DE SIMVEGF165.
GN SIMVEGF165.
OC Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheidae;
OC Cercopitheidae; Macaca.
OX NCBI_TaxID=9541;
RN [1];
RP SEQUENCE FROM N.A.
RX MEDLINE=96245208; PubMed=8641836;
RA Shima D.T., Gougos A., Miller J.W., Tolentino M., Robinson G.,
RA Adamis A.P., D'Amore P.A.;
RT "Cloning and mRNA expression of vascular endothelial growth factor in
RT ischemic retinas of Macaca fascicularis.";
RL Invest. Ophthalmol. Vis. Sci. 37:1334-1340(1996).
RL EMBL; S82167; AAB47118.1;
DR InterPro: IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
SQ SEQUENCE 191 AA; 22314 MW; CCE57097DD3779BD CRC64;

Query Match 80.0%; Score 88; DB 6; Length 191;
Best Local Similarity 80.0%; Pred. No. 2.5e-06;
Matches 16; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 HHEVVKFEDVLRSSCHPIE 20
DB 37 HHEVVKFMDYQRSYCHPIE 56

RESULT 5
Q9QX39          PRELIMINARY;      PRT; 190 AA.
ID Q9QX39;
AC Q9QX39;
DT 01-MAY-2000 (TEMBLrel. 13, Created)
DT 01-MAY-2000 (TEMBLrel. 13, Last sequence update)
DT 01-MAR-2003 (TEMBLrel. 23, Last annotation update)
DE Vascular endothelial growth factor.
GN VEGF.
OS Spalax leucodon ehrenbergi (Ehrenberg's mole rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Spalacinae;
OC Nannospalax.
OX NCBI_TaxID=30637;
RN [1];
RP SEQUENCE FROM N.A.
RX MEDLINE=99313148; PubMed=10386577;
RA Avivi A., Resnick M.B., Nevo E., Joel A., Levy A.P.;
RT "Adaptive hypoxic tolerance in the subterranean mole rat Spalax
RT ehrenbergi: the role of vascular endothelial growth factor.";
RL FEBS Lett. 452:133-140(1999).
RL EMBL; AF186236; AAD56245.1;
DR HSP; P49763; 1FZV.
DR InterPro: IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
SQ SEQUENCE 190 AA; 22488 MW; 2228383BC65F0BFE CRC64;

Query Match 77.3%; Score 85; DB 11; Length 190;
Best Local Similarity 84.2%; Pred. No. 7.6e-06;

```

Matches 16; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 2 HEVVKFEDVLRSSCHPIE 20
 DB 37 HEVVKFMDVQSYCRPIE 55

RESULT 6

ID O88911 PRELIMINARY; PRT; 110 AA.
 AC O88911;
 DT 01-NOV-1998 (TReMBLrel. 08, Created)
 DT 01-NOV-1998 (TReMBLrel. 08, Last sequence update)
 DT 01-MAR-2003 (TReMBLrel. 23, Last annotation update)
 DE Vascular endothelial growth factor A 110 (Fragment)
 GN VEGF
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=10116;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN-Sprague-Dawley; TISSUE=Penis;
 RX MEDLINE=99115228; PubMed=9916007;
 RA Burchardt M., Burchardt T., Chen M.W., Shabsigh A., de la Taille A.,
 RA Buttyan R., Shabsigh R.;
 RT "Expression of messenger ribonucleic acid splice variants for vascular
 RT endothelial growth factor in the penis of adult rats and humans."
 RL Biol. Reprod. 60:398-404(1999).
 RL EMBL; AF080594; AAC36708.1;
 DR HSSP; P49763; 1FZV.
 DR InterPro: IPR002400; GF_cysknot.
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR PRINTS; PR00438; GFCYSKNOT.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 FT NON_TER 1
 SQ SEQUENCE 110 AA; 12713 MW; B81B79AC08D89F06 CRC64;

Query Match 65.5%; Score 72; DB 11; Length 110;
 Best Local Similarity 73.7%; Pred. No. 0.00057;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

QY 2 HEVVKFEDVLRSSCHPIE 20
 DB 11 HEVVKFMDVQSYCRPIE 29

RESULT 7

ID Q8SP29 PRELIMINARY; PRT; 124 AA.
 AC Q8SP29;
 DT 01-JUN-2002 (TReMBLrel. 21, Created)
 DT 01-JUN-2002 (TReMBLrel. 21, Last sequence update)
 DT 01-OCT-2002 (TReMBLrel. 22, Last annotation update)
 DE Vascular endothelial growth factor (Fragment)
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Myocardium.
 RA Yuan H., Li J.;
 RT "The expression of VEGF in porcine collateral-dependent myocardial by
 RT exercise training."
 RL Submitted (DEC-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF461807; AAL85286.1;
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.

DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.
 FT NON_TER 124
 SQ SEQUENCE 124 AA; 14552 MW; 2E1C1A009E67C9C9 CRC64;

Query Match 65.5%; Score 72; DB 6; Length 124;
 Best Local Similarity 73.7%; Pred. No. 0.00064;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

QY 2 HEVVKFEDVLRSSCHPIE 20
 DB 9 HEVVKFMDVQSYCRPIE 27

RESULT 8

ID Q8HY70 PRELIMINARY; PRT; 184 AA.
 AC Q8HY70;
 DT 01-MAR-2003 (TReMBLrel. 23, Created)
 DT 01-MAR-2003 (TReMBLrel. 23, Last sequence update)
 DT 01-MAR-2003 (TReMBLrel. 23, Last annotation update)
 DE Vascular endothelial growth factor A (Fragment)
 OS Mustela vison (American mink).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Mustelidae; Mustelinae;
 OC Mustela.
 OX NCBI_TaxID=9667;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Lopes F.L., Demarais J.A., Gevry N.Y., Ledoux S., Murphy B.D.;
 RT "Expression of VEGF isoforms and receptors during implantation in
 RT Mustela vison."
 RL Submitted (OCT-2002) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AV158156; AAN76365.1;
 FT NON_TER 184
 SQ SEQUENCE 184 AA; 21608 MW; BAD47CC80C146F22 CRC64;

Query Match 65.5%; Score 72; DB 6; Length 184;
 Best Local Similarity 73.7%; Pred. No. 0.00094;
 Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

QY 2 HEVVKFEDVLRSSCHPIE 20
 DB 37 HEVVKFMDVQSYCRPIE 55

RESULT 9

ID Q95LQ4 PRELIMINARY; PRT; 189 AA.
 AC Q95LQ4;
 DT 01-DEC-2001 (TReMBLrel. 19, Created)
 DT 01-DEC-2001 (TReMBLrel. 19, Last sequence update)
 DT 01-MAR-2003 (TReMBLrel. 23, Last annotation update)
 DE Vascular endothelial growth factor.
 OS Felis silvestris catus (Cat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
 OX NCBI_TaxID=9685;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Roga L., Kobayashi Y., Yazawa M., Masuda K., Ohno K., Tsujimoto H.;
 RT "Nucleotide sequence and expression of the feline vascular endothelial
 RT growth factor."
 RL Submitted (SEP-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AB071947; BAB68520.1;
 DR InterPro: IPR000072; PD_growth_factor.
 DR Pfam; PF00341; PDGF; 1.
 DR ProDom; PD001629; PD_growth_factor; 1.
 DR SMART; SM00141; PDGF; 1.
 DR PROSITE; PS00249; PDGF_1; 1.
 DR PROSITE; PS0278; PDGF_2; 1.

```

SQ SEQUENCE 189 AA; 22193 MW; C1E4646759AB3FD6 CRC64;
  Query Match 65.5%; Score 72; DB 6; Length 189;
  Best Local Similarity 73.7%; Pred. No. 0.00096;
  Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
  ||||| || :||| |||
Db 37 HEVVKFMDVYQSRCPPIE 55

RESULT 10
O912EI PRELIMINARY; PRT; 190 AA.
AC O912EI;
DT 01-DEC-2001 (TREMBlrel. 19, Created)
DT 01-DEC-2001 (TREMBlrel. 19, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor.
GN VEGF.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1];
RP SEQUENCE FROM N.A.
RC STRAIN-Sprague-Dawley;
RA Marion S.; Lee T.-C.;
RT "Cloning of multiple VEGF splice variants from hypoxic neonatal rat cardiomyocytes."
RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AY033506; AAL07526.1;
DR InterPro: IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF_1;
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF_1;
DR PROSITE; PS00249; PDGF_1;
DR PROSITE; PS50278; PDGF_2; 1.
SQ SEQUENCE 190 AA; 22396 MW; 589374010441F377 CRC64;

Query Match 65.5%; Score 72; DB 11; Length 190;
Best Local Similarity 73.7%; Pred. No. 0.00097;
Matches 14; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
  ||||| || :||| |||
Db 37 HEVVKFMDVYQSRCPPIE 55

RESULT 11
O70123 PRELIMINARY; PRT; 141 AA.
AC O70123;
DT 01-AUG-1998 (TREMBlrel. 07, Created)
DT 01-AUG-1998 (TREMBlrel. 07, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE VEGF115.
GN VEGFA OR VEGF.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1];
RP SEQUENCE FROM N.A.
RC STRAIN-ICR;
RX MEDLINE=95101726; PubMed=7803491;
RA Sugihara T., Kaul S.C., Mitsui Y., Wadhwa R.;
RT "Enhanced expression of multiple forms of VEGF is associated with spontaneous immortalization of murine fibroblasts."
RL Biochim. Biophys. Acta 1224:365-370(1994).
RN [2];
RP SEQUENCE FROM N.A.
RC STRAIN-ICR;

```

```

RX MEDLINE=98112857; PubMed=9446618;
RA Sugihara T., Wadhwa R., Kaul S.C., Mitsui Y.;
RT "A novel alternatively spliced form of murine vascular endothelial growth factor, VEGF 115."
RL J. Biol. Chem. 273:3033-3038(1998).
DR EMBL; U50279; AAC05442.1;
DR HSSP; P49763; 1FZV.
DR MGD; MGI:103178; Vegfa.
DR InterPro: IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF_1;
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF_1;
DR PROSITE; PS00249; PDGF_1;
DR PROSITE; PS50278; PDGF_2; 1.
SQ SEQUENCE 141 AA; 15550 MW; A27C4EF5A7071338 CRC64;

Query Match 64.5%; Score 71; DB 11; Length 141;
Best Local Similarity 68.4%; Pred. No. 0.0011;
Matches 13; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
  ||||| || :||| |||
Db 37 HEVVKFMDVYQSRCPPIE 55

RESULT 12
O9MZB1 PRELIMINARY; PRT; 118 AA.
AC O9MZB1;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)
DE Vascular endothelial growth factor (Fragment).
GN VEGF.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoides;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1];
RP SEQUENCE FROM N.A.
RC TISSUE=Placental artery endothelium;
RA Zheng J., Tsoi S.C., Magness R.R.;
RT "Growth factor expression in ovine fetal placental artery endothelial cells."
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF250375; AAF75258.1;
DR HSSP; P49763; 1FZV.
DR InterPro: IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF_1;
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF_1;
DR PROSITE; PS00249; PDGF_1;
DR PROSITE; PS50278; PDGF_2; 1.
FT NON_TER 1;
SQ SEQUENCE 118 AA; 13931 MW; 757DC53AA56378A6 CRC64;

Query Match 62.7%; Score 69; DB 6; Length 118;
Best Local Similarity 68.4%; Pred. No. 0.0019;
Matches 13; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

OY 2 HEVVKFEDVLRSSCHPIE 20
  ||||| || :||| |||
Db 9 HEVVKFMDVYQSRCPPIE 27

RESULT 13
O77643 PRELIMINARY; PRT; 190 AA.
AC O77643;
DT 01-NOV-1998 (TREMBlrel. 08, Created)
DT 01-NOV-1998 (TREMBlrel. 08, Last sequence update)
DT 01-MAR-2003 (TREMBlrel. 23, Last annotation update)

```

RESULT 15

Qy	3	EVVKFEDVLRSSCHPIE	20
Db	1	EVVKFMDVYQRSYCRDPIE	18

Search completed: July 24, 2003, 14:47:28
Job time : 40.2941 secs